



Results of Hoopnet Sampling to Examine Changes in Juvenile Humpback Chub Abundance and Size Before and After the 2004 Experimental High Flow

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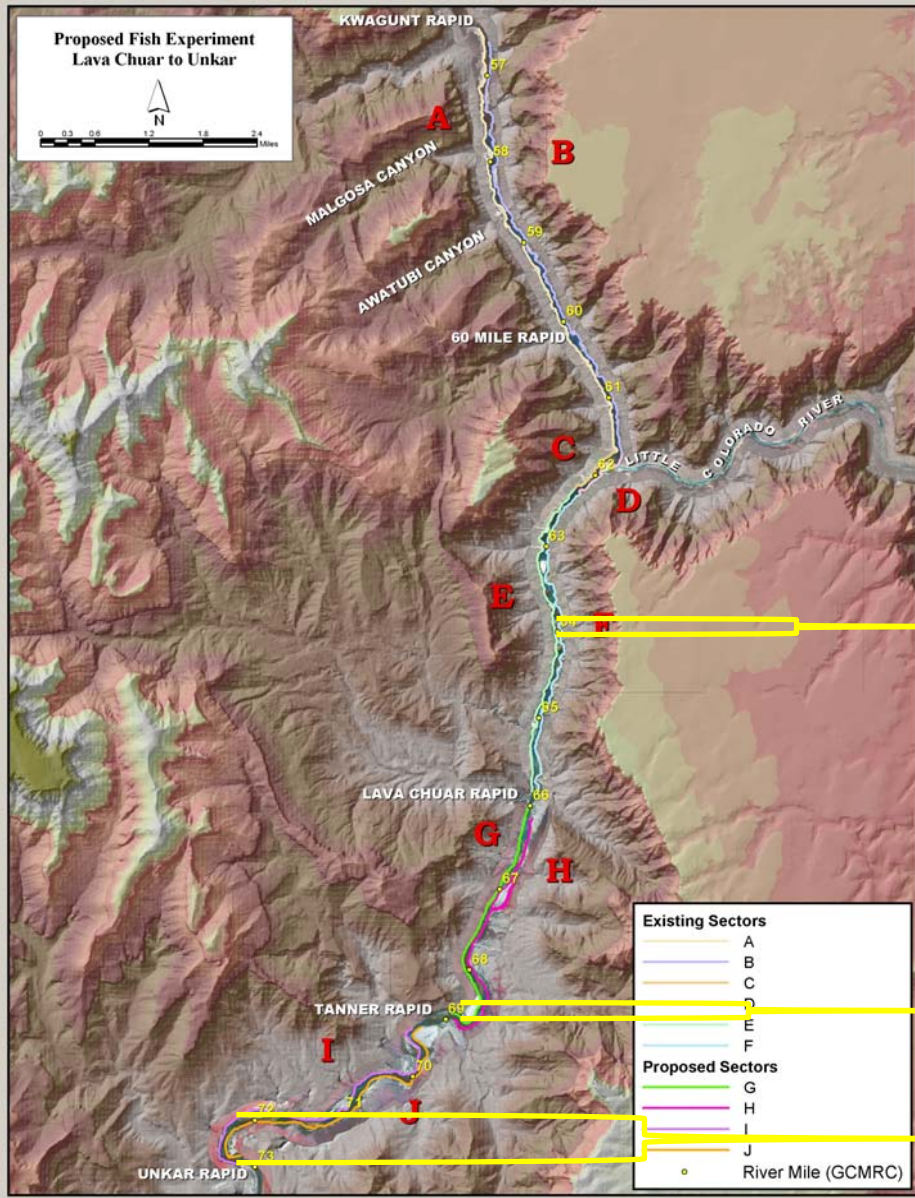
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Experimental Design

- Hoopnet sampling to be conducted for three days before and after the experimental high flow.
- Sampling locations and protocols identical to those used during mechanical removal operation.
- Dam releases constant 8000 cfs during both sampling events.

Hoopnet Sampling Reaches



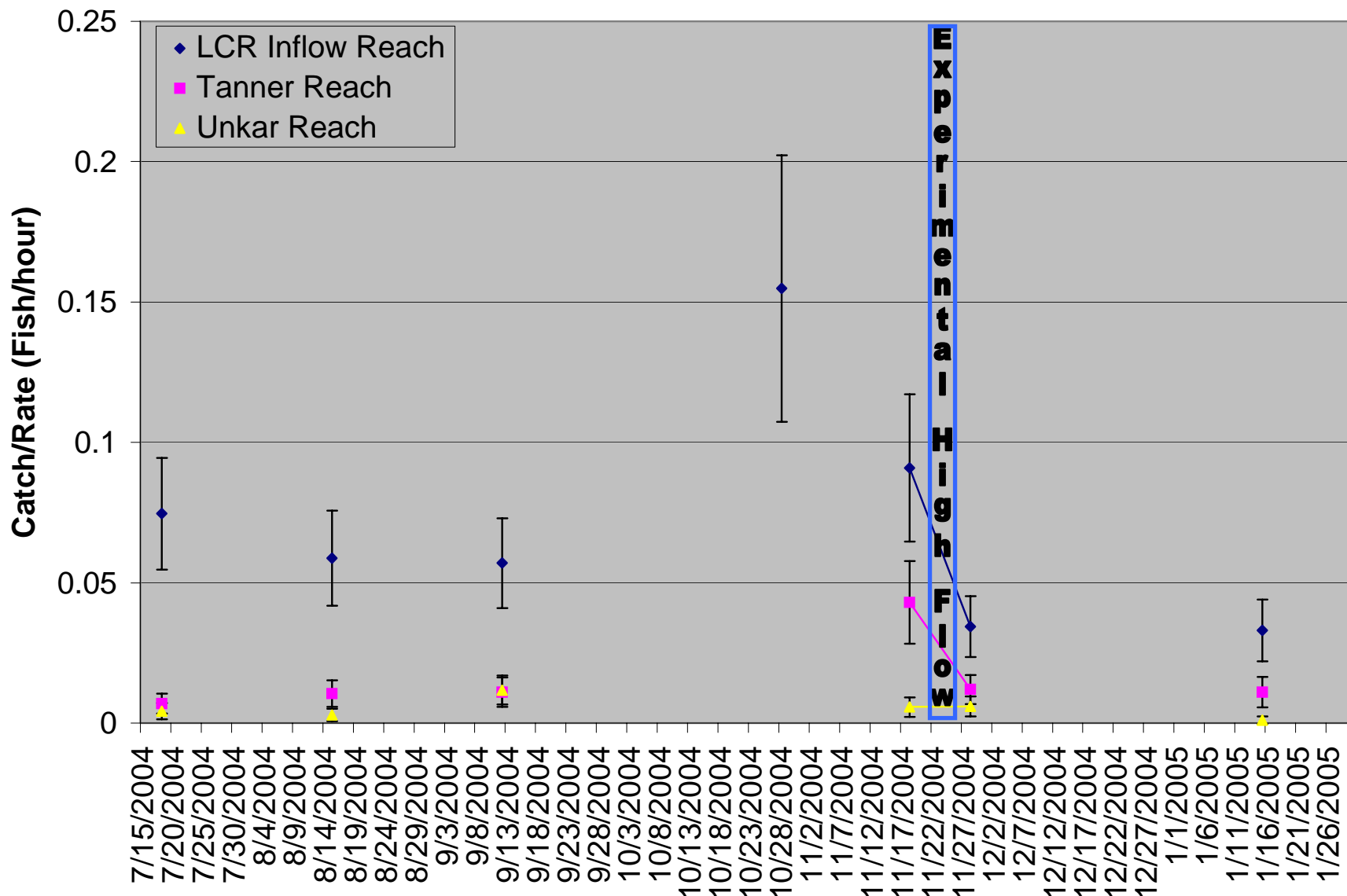
Little Colorado River Inflow
Hoopnet Sampling Reach

Tanner Hoopnet Sampling
Reach

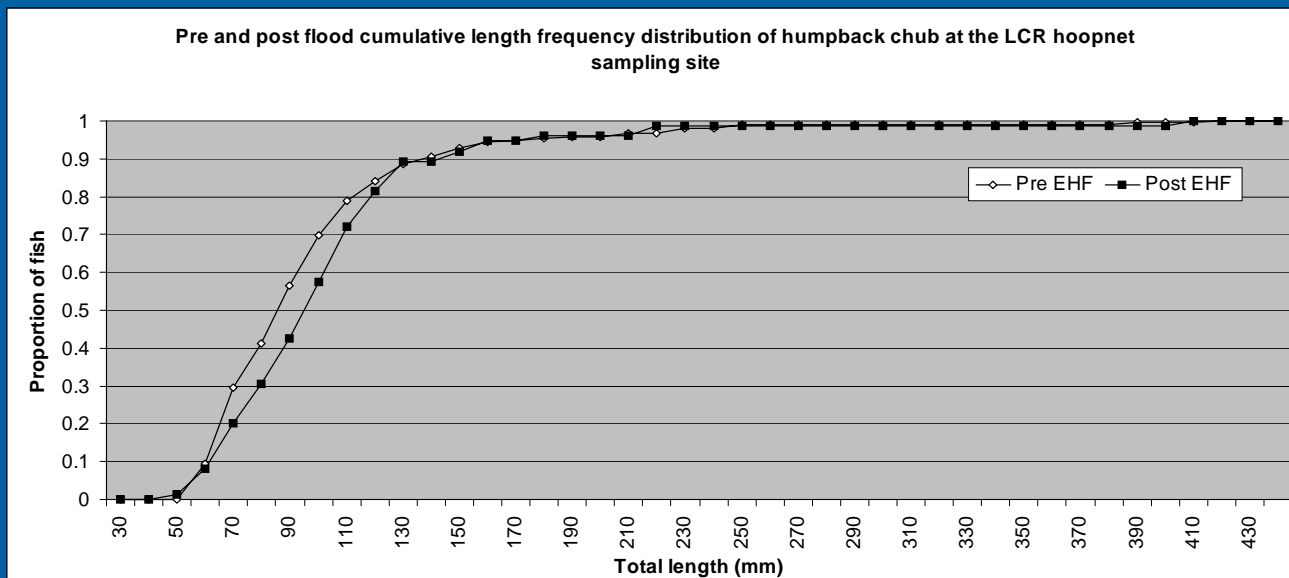
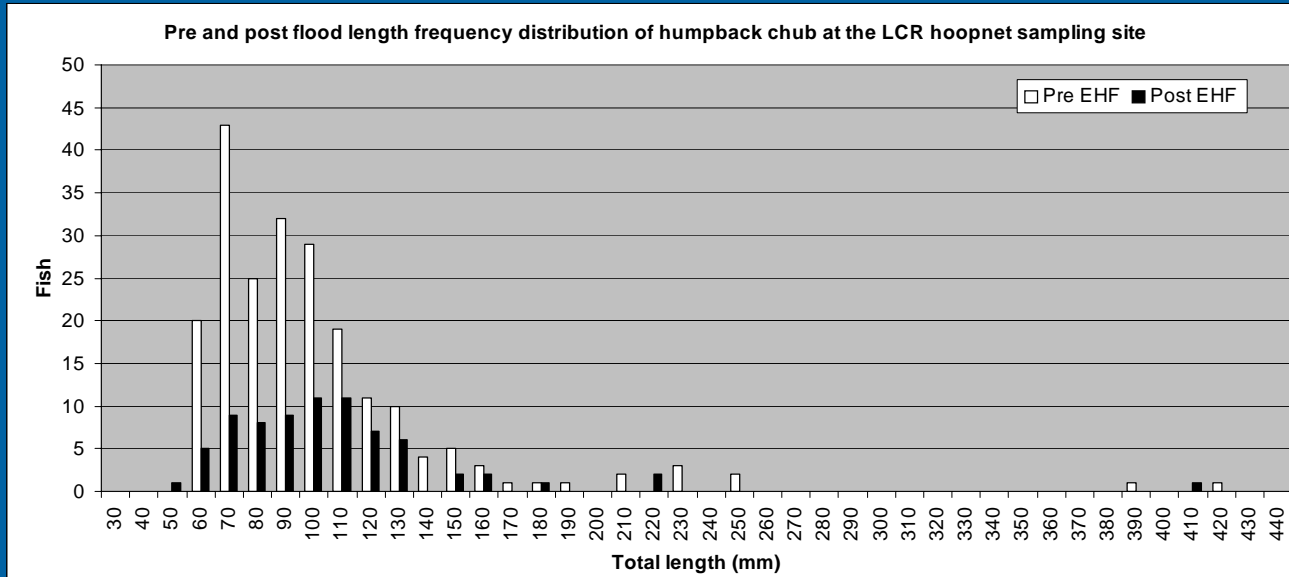
Unkar Hoopnet Sampling
Reach

Hoopnet Sampling Results - Abundance

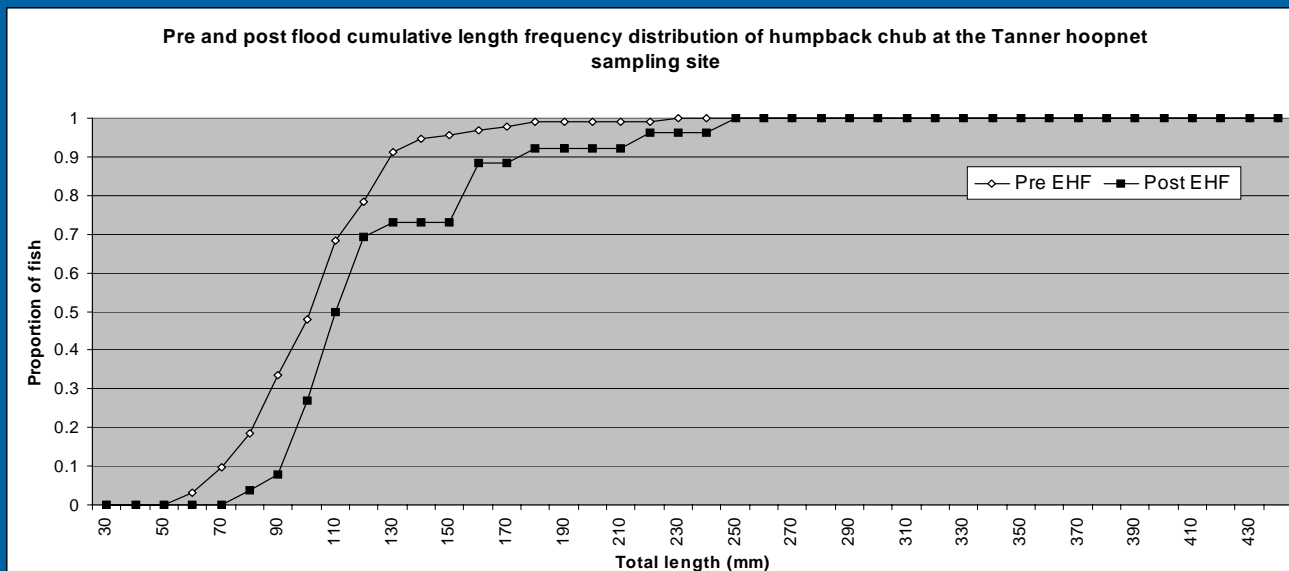
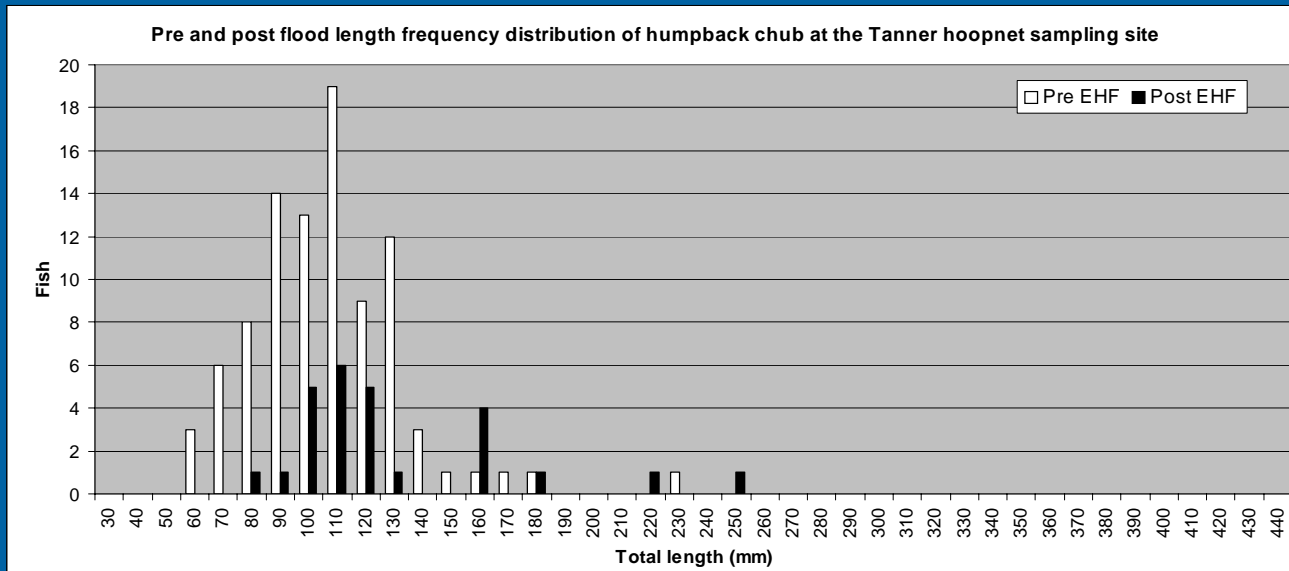
Humpback Chub Relative Abundance (Catch/Rate)



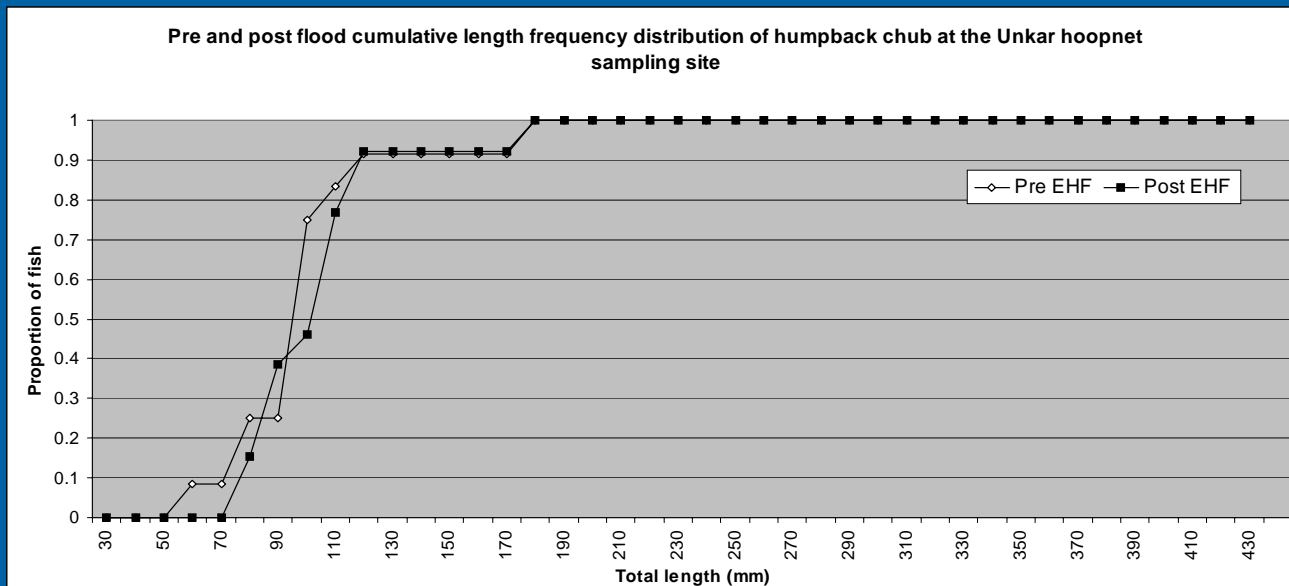
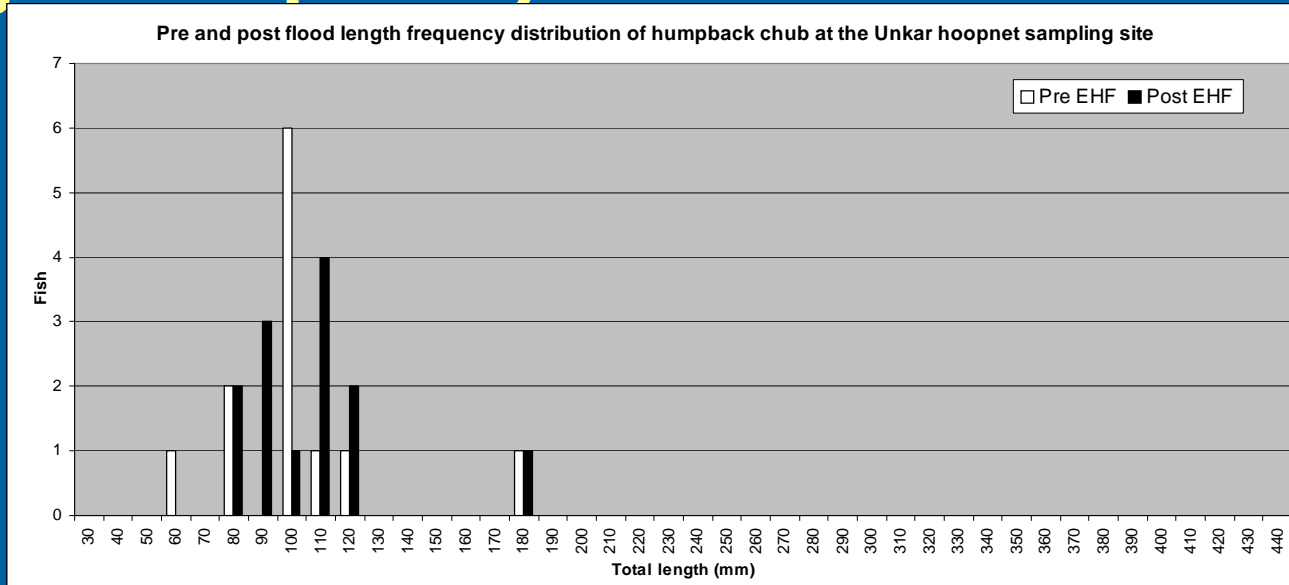
Hoopnet Sampling Results – LCR Length Frequency



Hoopnet Sampling Results – Tanner Length Frequency



Hoopnet Sampling Results – Unkar Length Frequency



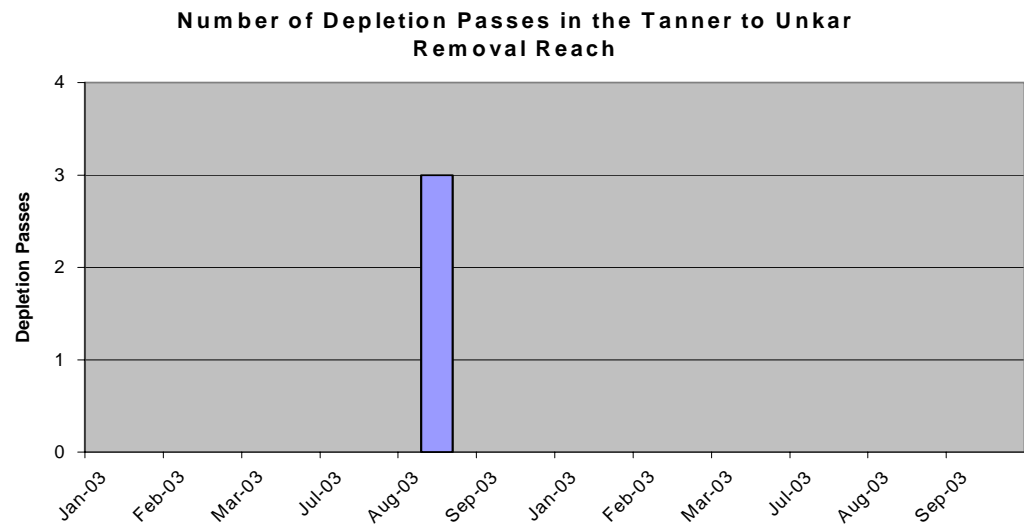
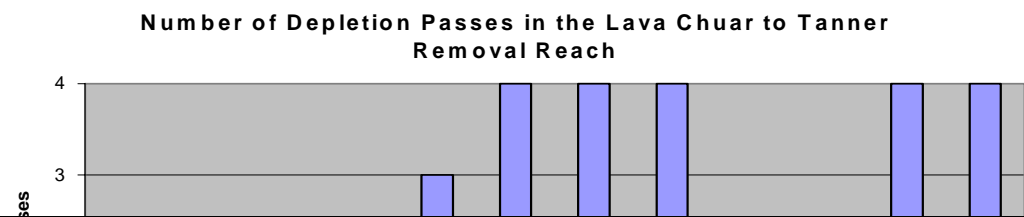
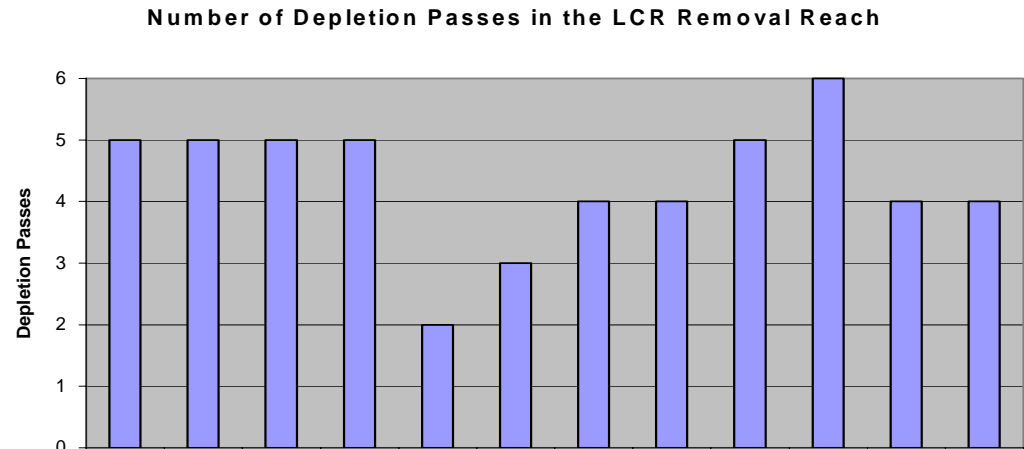
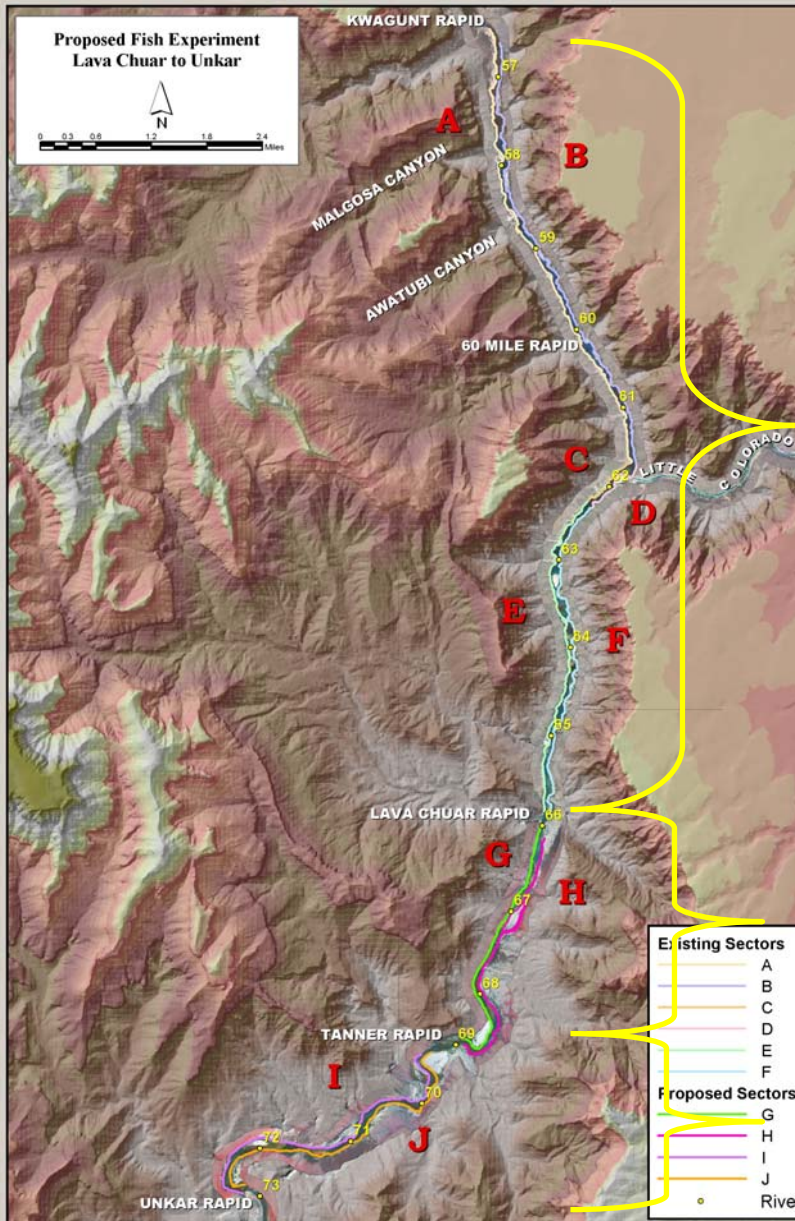
Preliminary Conclusions

- Relative Abundance of HBC declined by approximately 66% following the EHF in the LCR and Tanner reaches. Relative abundance of HBC was unchanged in the Unkar reach before and after the EHF.
- Length frequency distribution of HBC in the LCR and Tanner reaches was shifted to larger fish following the EHF suggesting a reduction in smaller fish following the EHF.
- Caveat: Concurrent with the EHF the LCR flooded. Therefore, sampling conditions were not identical before and after the EHF (elevated turbidity in the Colorado River).

Preliminary Conclusions

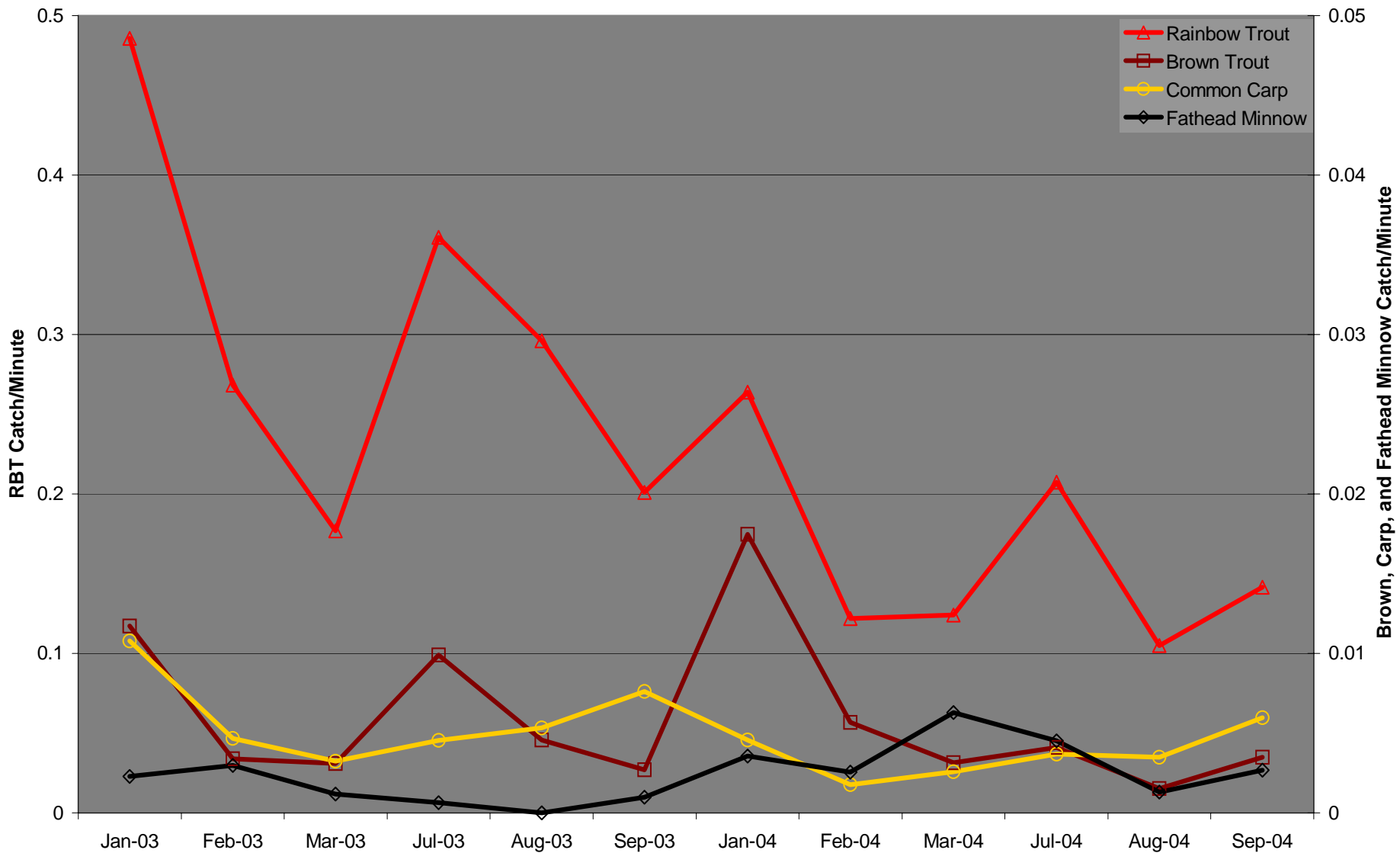
- Preliminary results suggest that the EHF may have been detrimental to juvenile HBC rearing in the LCR and Tanner Reaches
- Adaptive Management Practitioners should be cognizant of the potential detrimental affects of EHF's on juvenile HBC in the mainstem Colorado River.
- The EHF may make it more difficult to determine the effect of mechanical removal on the population dynamics of HBC unless an adequate long term experimental design is adopted to disentangle the affects of multiple types of experimental actions.

Mechanical Removal Reach Effort



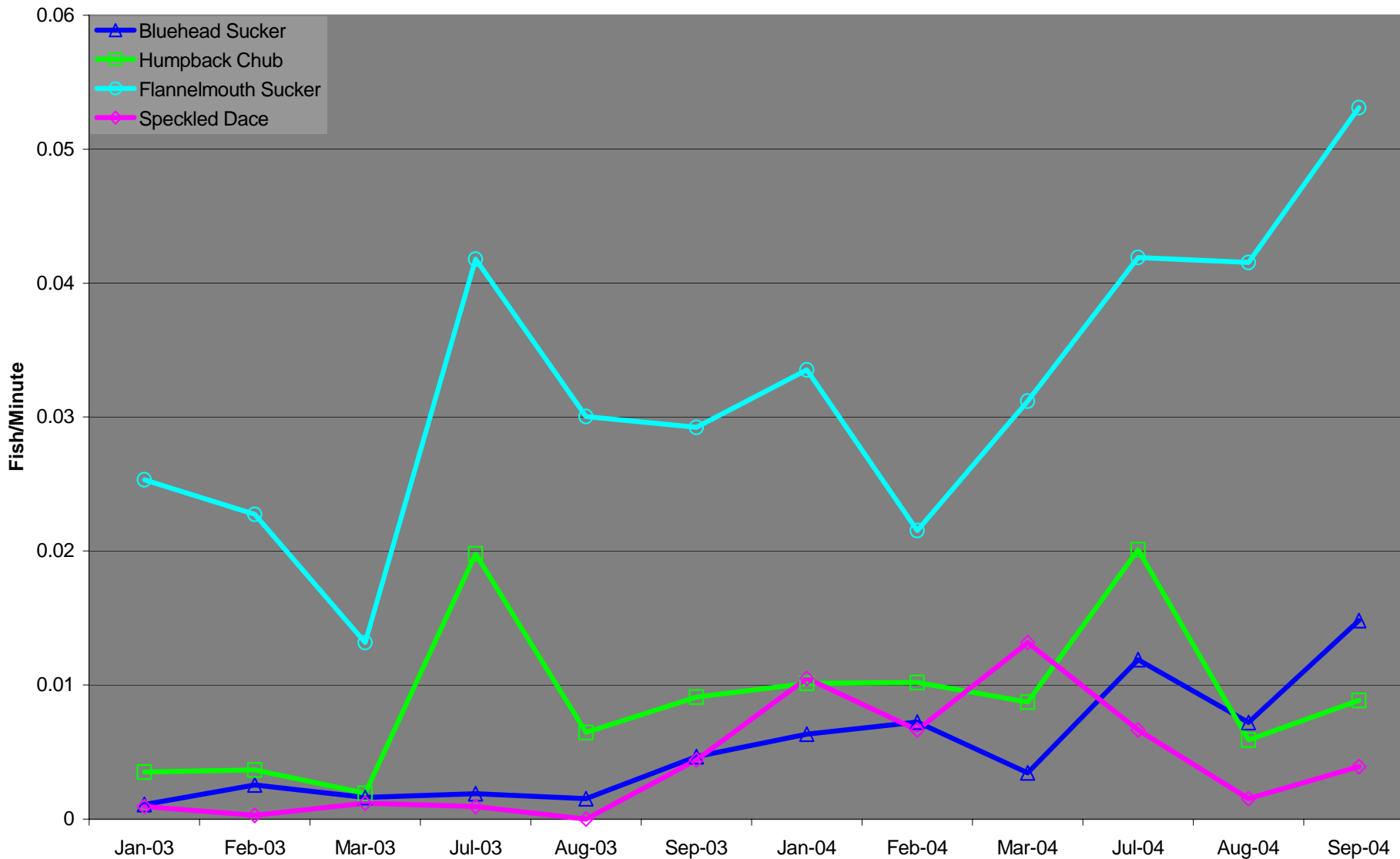
Little Colorado River Removal Reach Results

Electrofishing Catch Rate for Non-Native Fish Species within the Little Colorado River Removal Reach



Little Colorado River Removal Reach Results

Electrofishing Catch Rate for Native Fish Species within the Little Colorado River Removal Reach

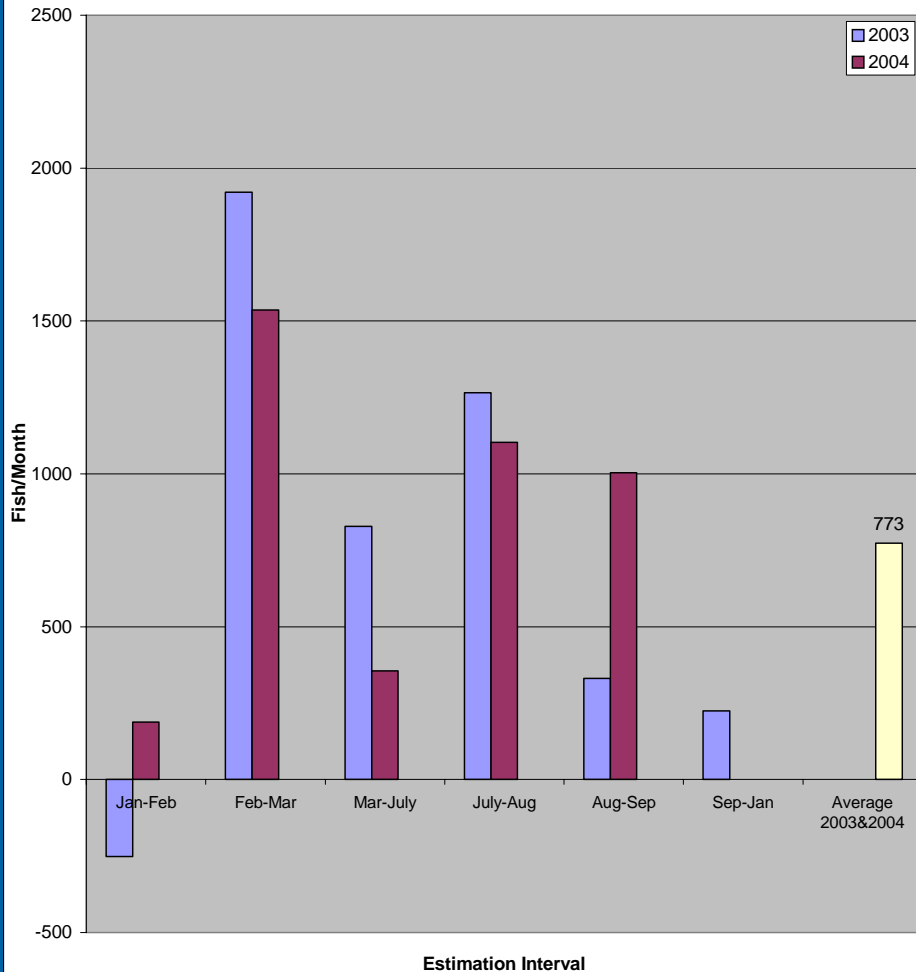


Little Colorado River Removal Reach Rainbow Trout Removal Efficacy

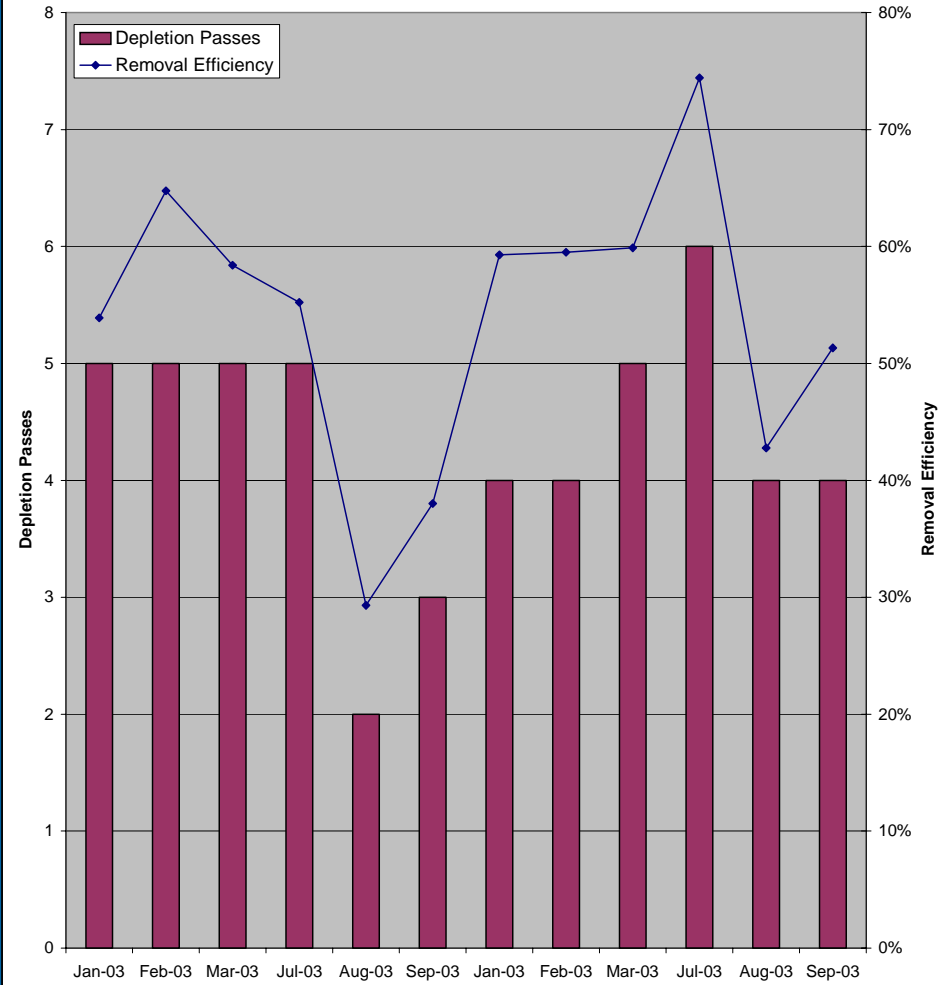
How fast they come in.... 773/mo

How fast can we take them out...12%/pass

Monthly Rainbow Trout Immigration Rate Into The LCR Removal Reach



Depletion Passes versus Removal Efficiency in the LCR Removal Reach



Power Analysis for Estimating a Binomial Proportion

