JUVENILE SALMONID USE OF CREATED STREAM HABITATS SAMMAMISH RIVER, WASHINGTON

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DRIVER

- Sammamish River Restoration Plan
- Sammamish River Watershed Forum
- King County DNR Remeander Project
- ESA Compliance

OBJECTIVES

- 1°: Determine juvenile salmonid use of created habitat relative to existing habitat in Sammamish River
- 2°: Identify important naturally occurring habitat types for juvenile salmonids in Sammamish River
- 3°: Measure growth of juvenile salmonids rearing in the Sammamish River
- 4°: Determine the relative abundance of juvenile salmonids longitudinally in the Sammamish River
- 5°: Determine the length of residency of juvenile salmonids in the Sammamish River

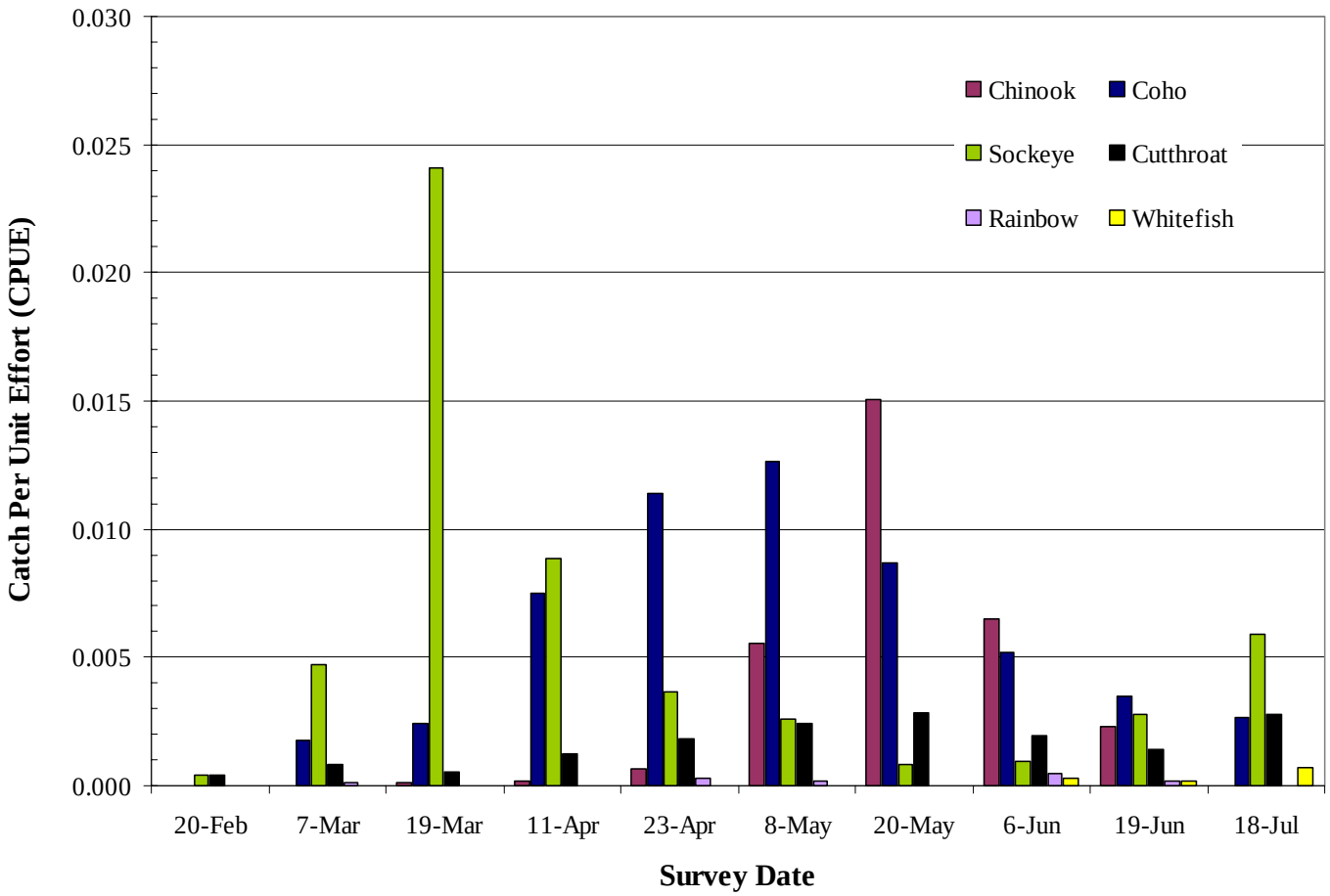
METHODS

- Study area: Sammamish River (RM 0.5-13.6)
- Nighttime survey periods
  - Single pass backpack electrofishing
- Habitat stratification
  - Existing mainstem habitats
    - Margins
  - Created habitats
    - Setback levees w/o LWD
    - Setback levees w/ LWD
    - LWD
    - Controls
- Water temperature
- Stage and discharge

NIGHT SURVEYS

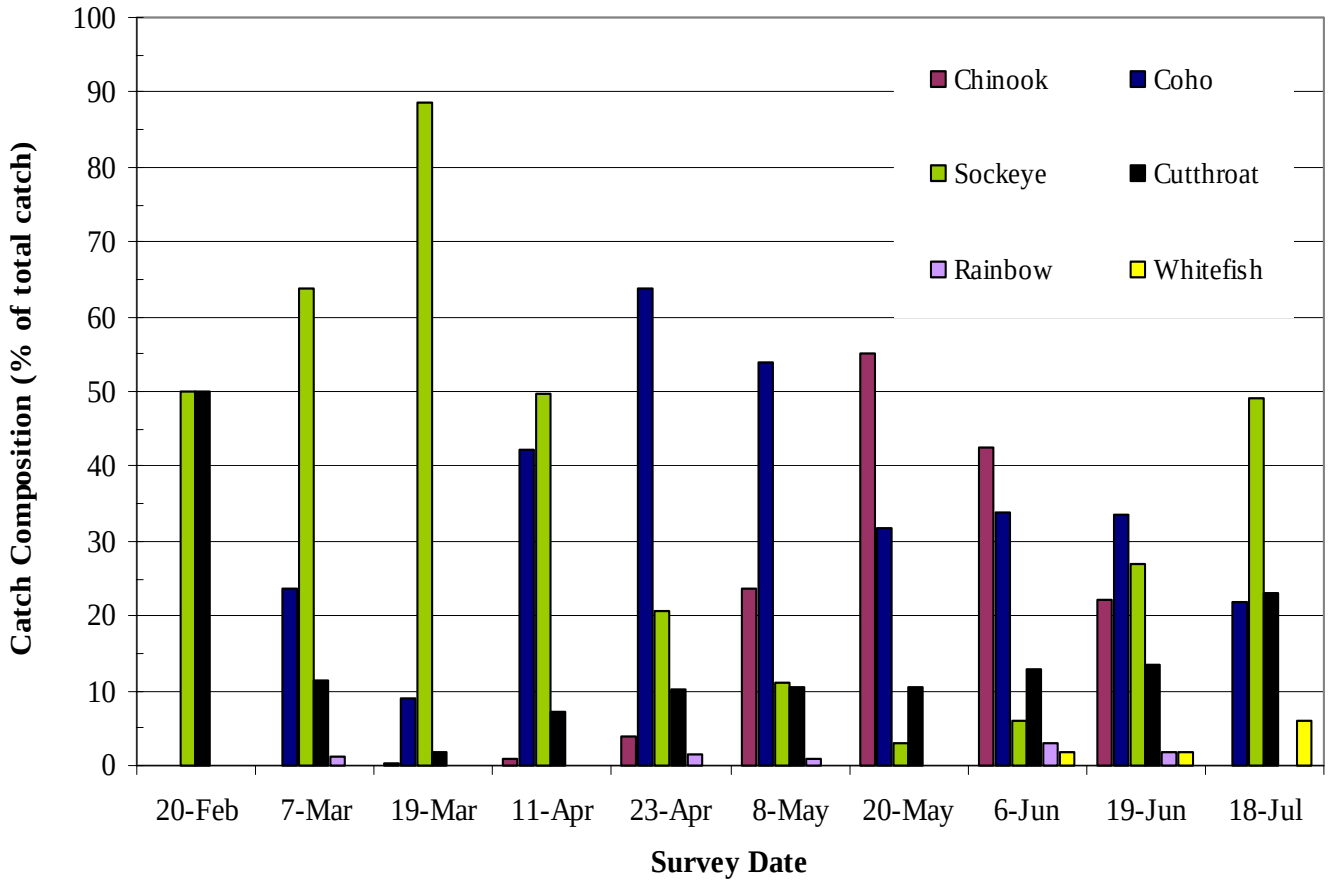
- Survey period: twice monthly
  - February - June
- Catch per unit effort
  - reach/site/habitat
  - species
  - date
- Age and growth
- Species distribution
- Emergence
- Residency period
- Food habits

RESULTS: Relative Abundance (all sites)

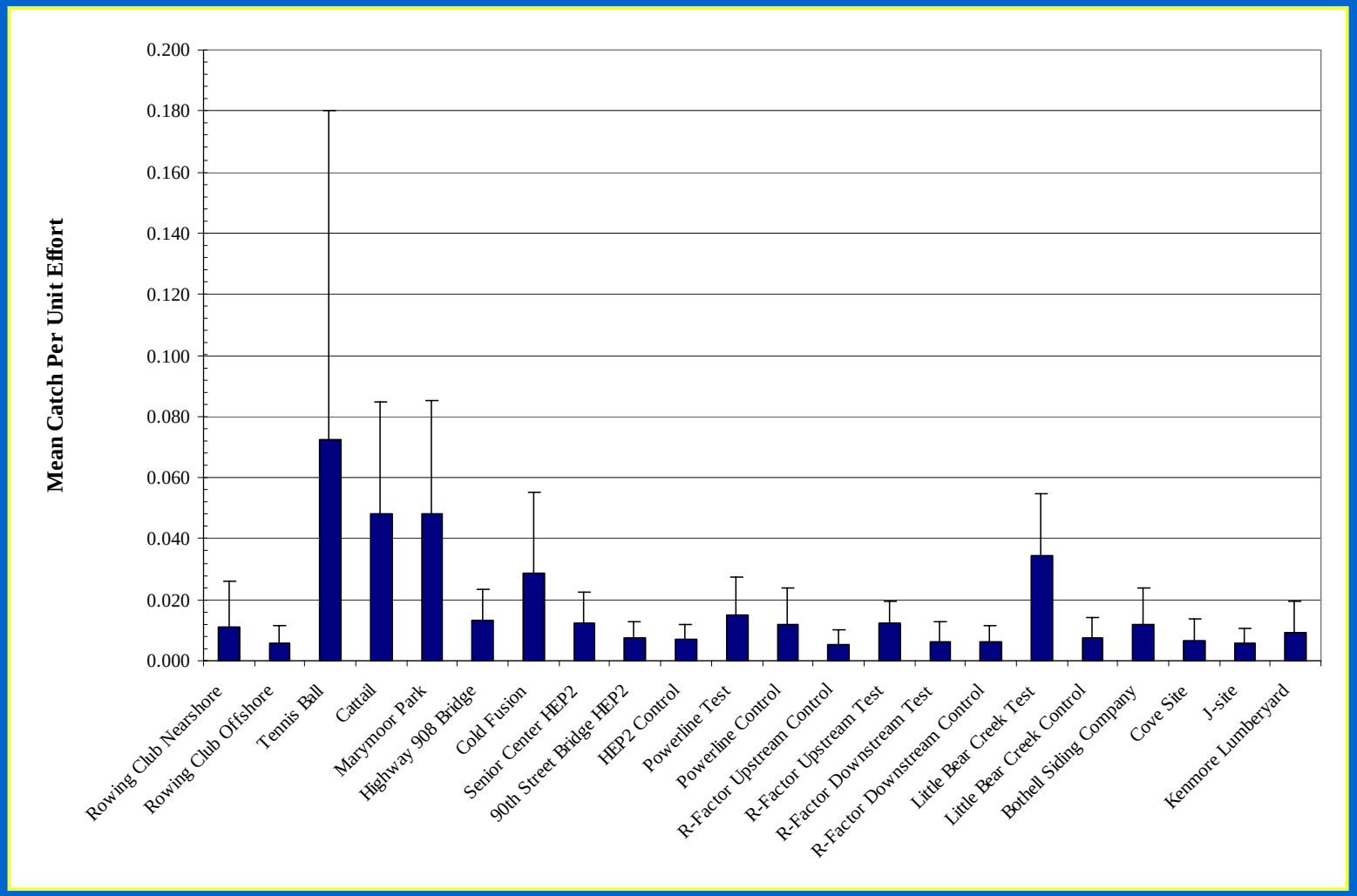


Survey Date	CPUE
20 February	0.00080
7 March	0.00745
19 March	0.02714
11 April	0.01786
23 April	0.01782
8 May	0.02346
20 May	0.02741
6 June	0.01533
19 June	0.01035
18 July	0.01203
Grand Total	0.01599

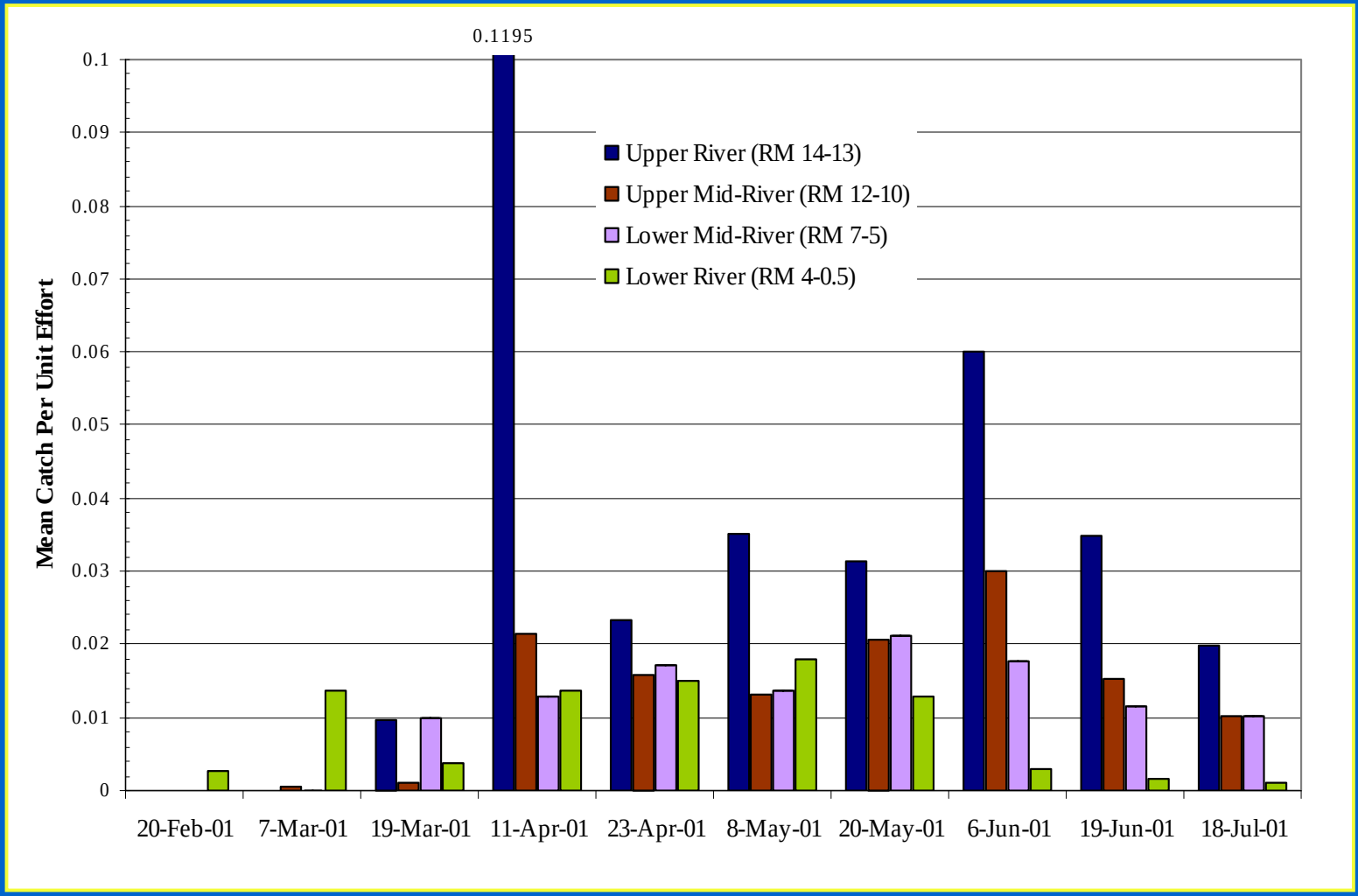
RESULTS: Species Composition (all sites)



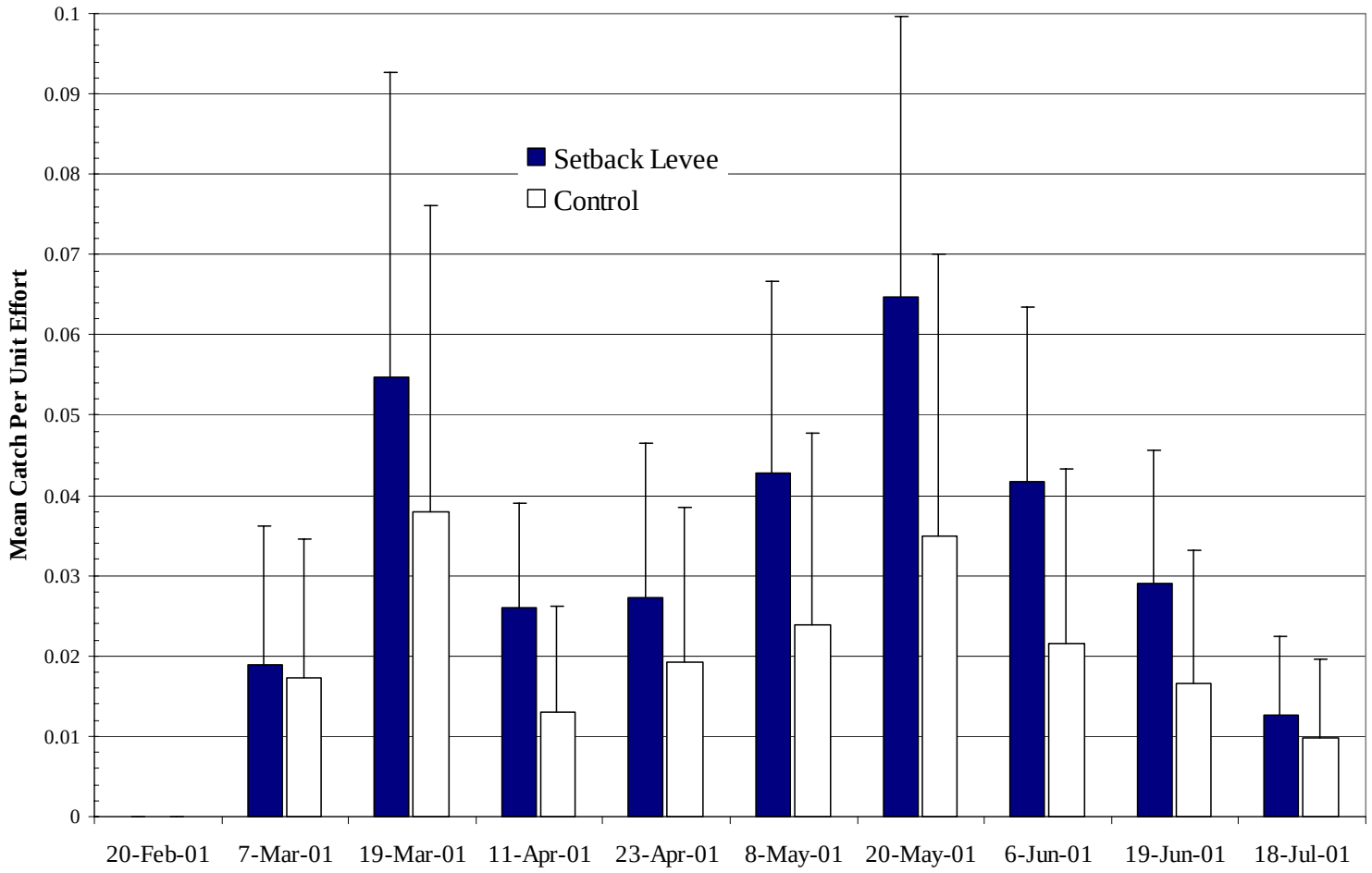
RESULTS: Longitudinal Distribution (site)



RESULTS: Longitudinal Distribution (reach)

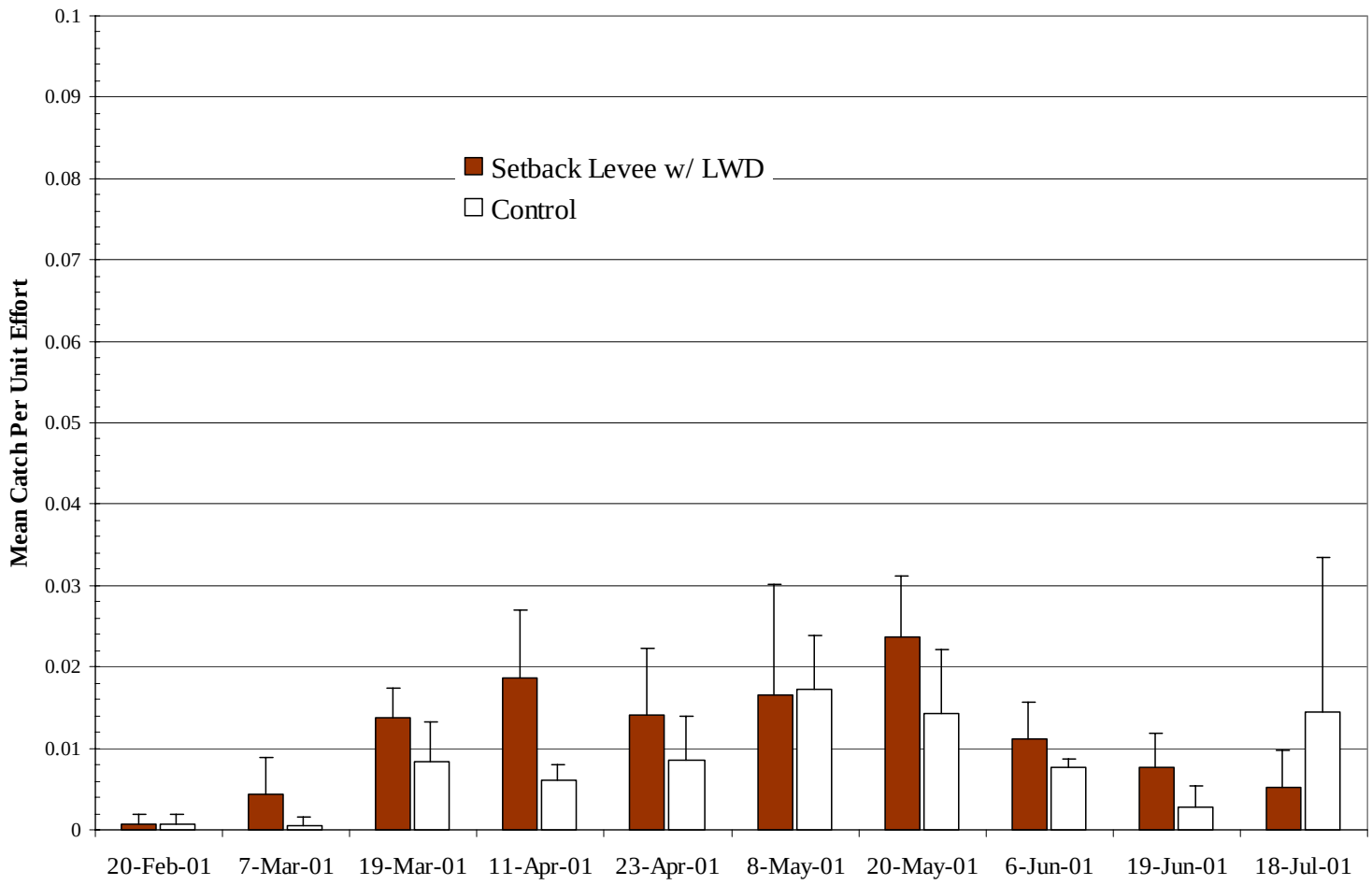


RESULTS: Use of Created Habitats

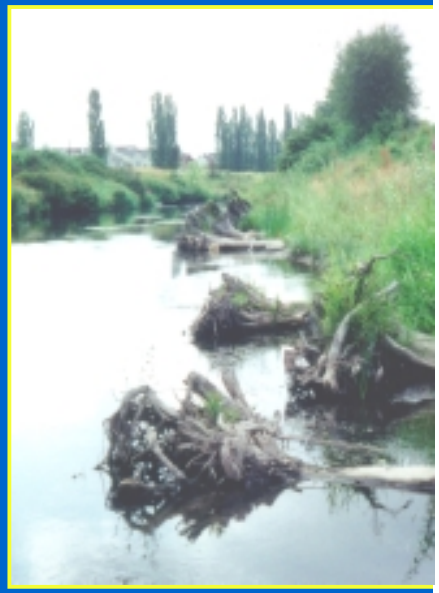


Setback Levee w/o LWD

RESULTS: Use of Created Habitats



Setback Levee w/ LWD



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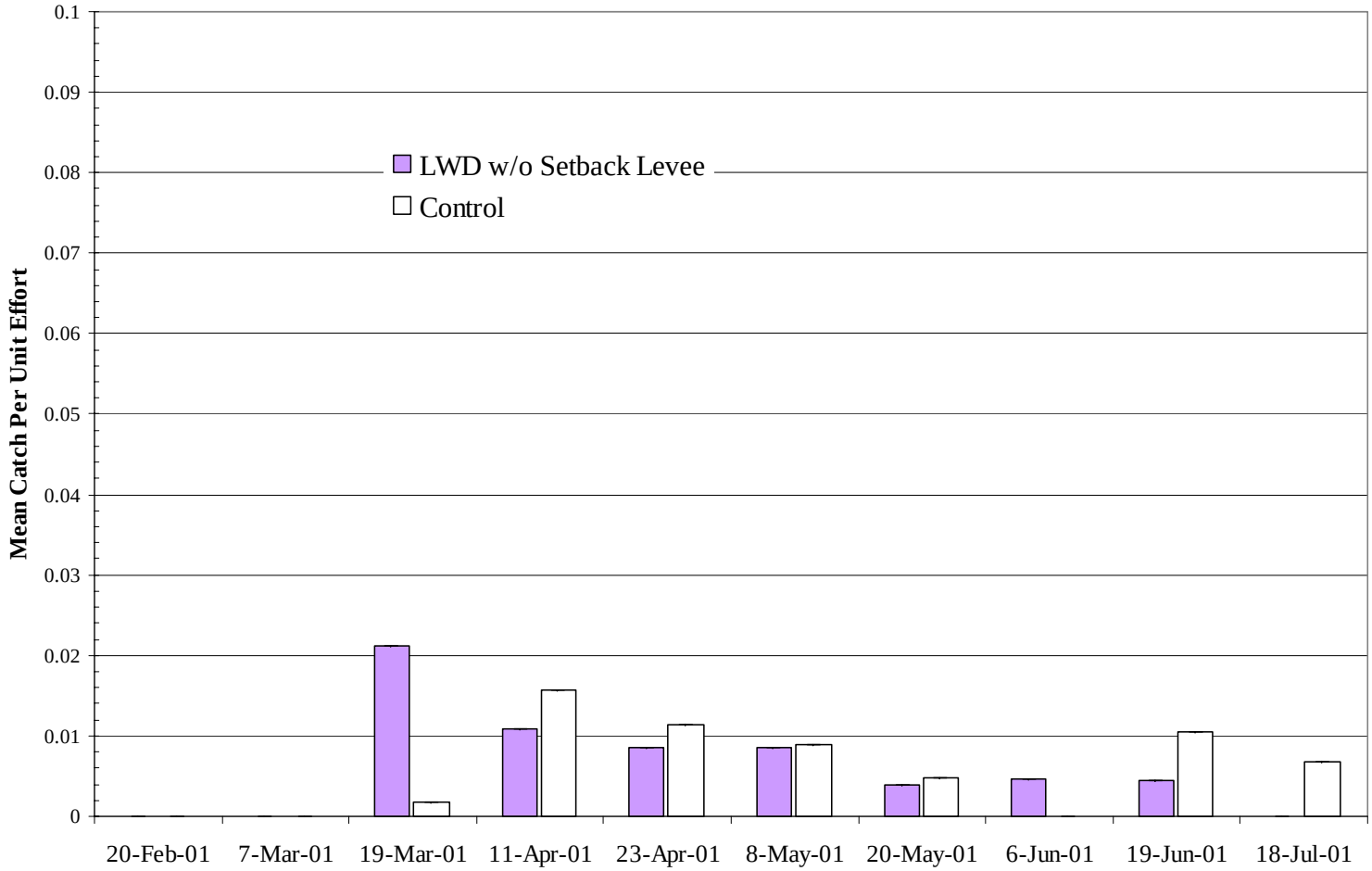
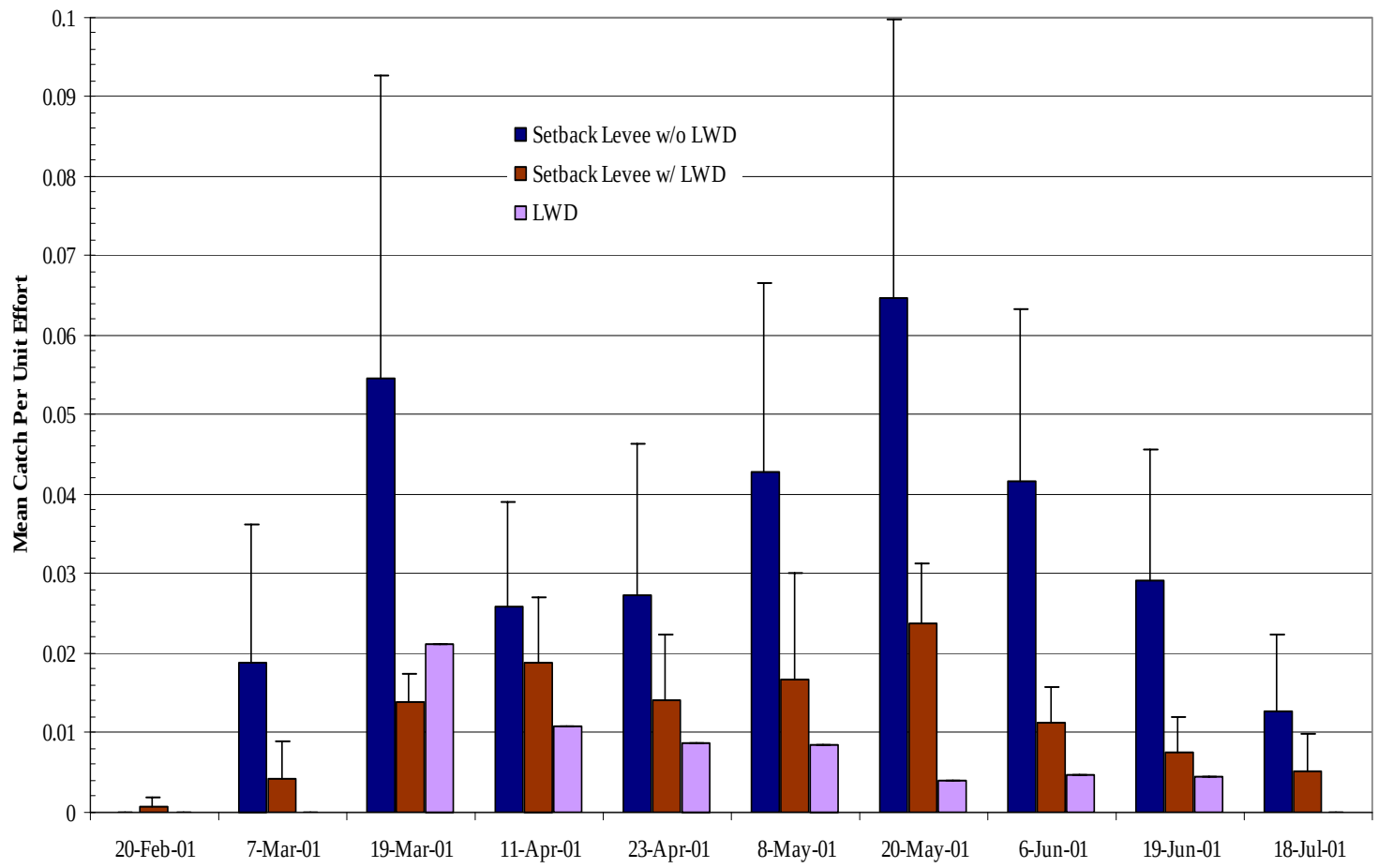


LWD w/o Setback Levee

RESULTS: Use of Created Habitats



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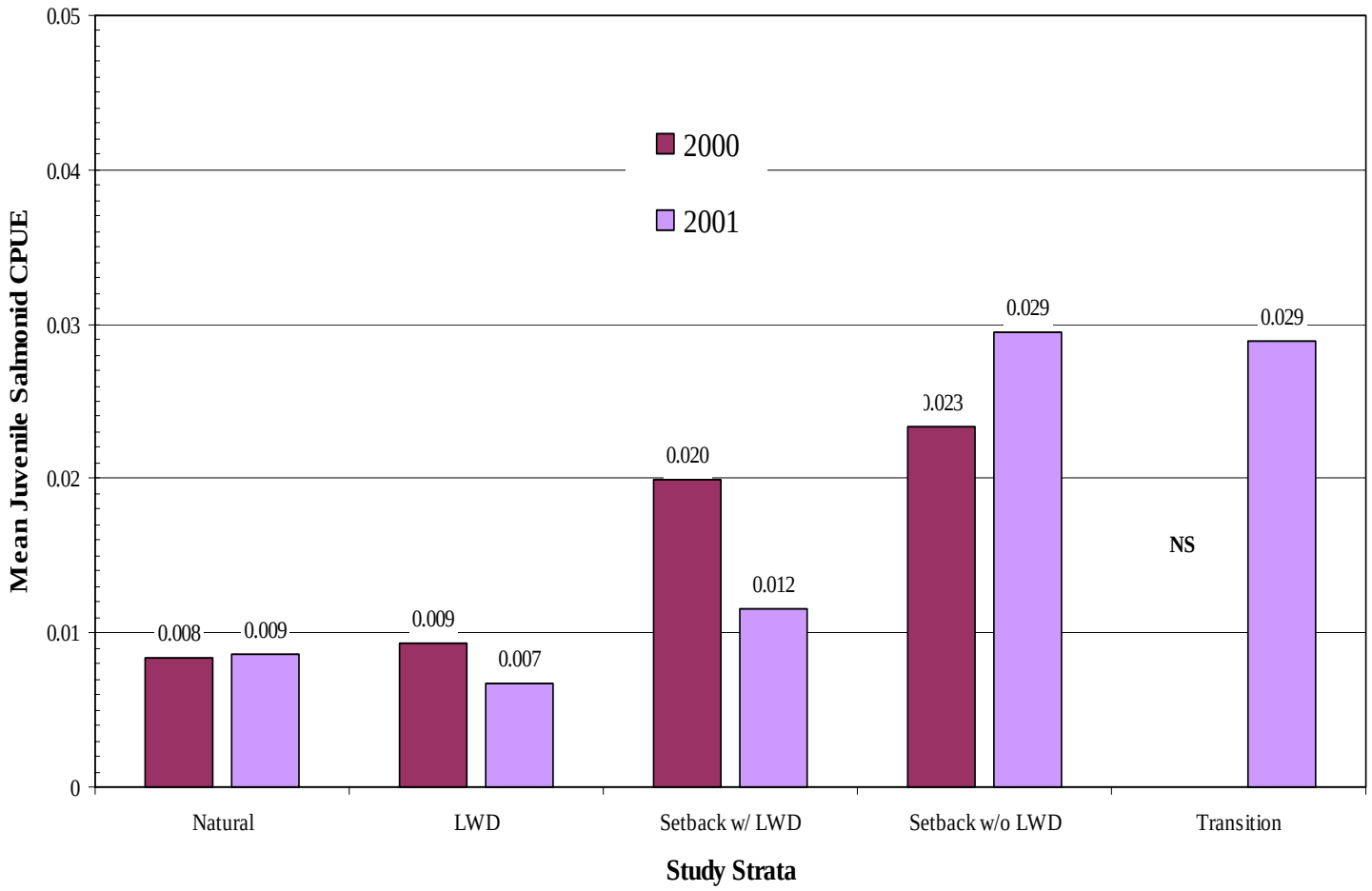
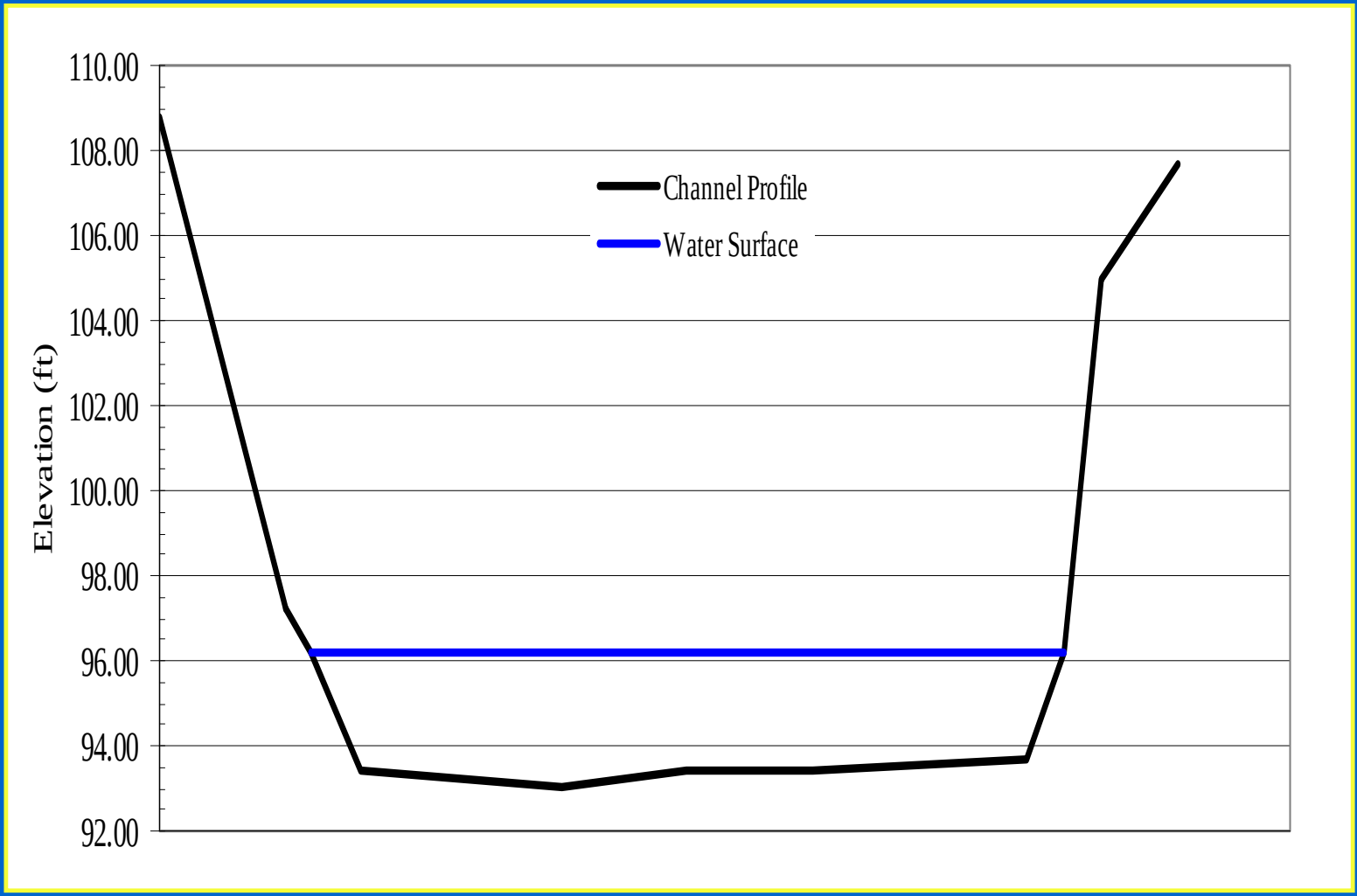
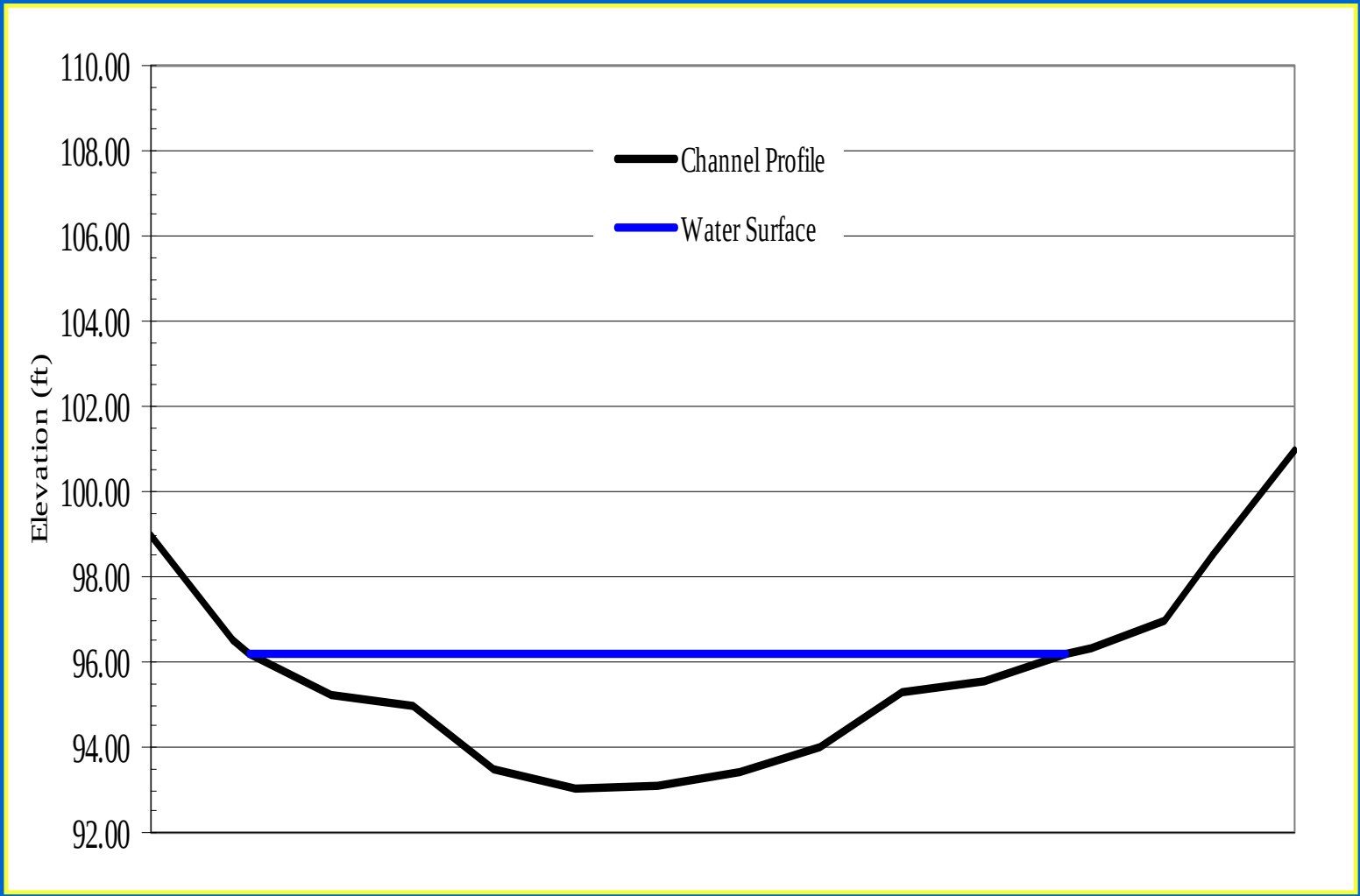


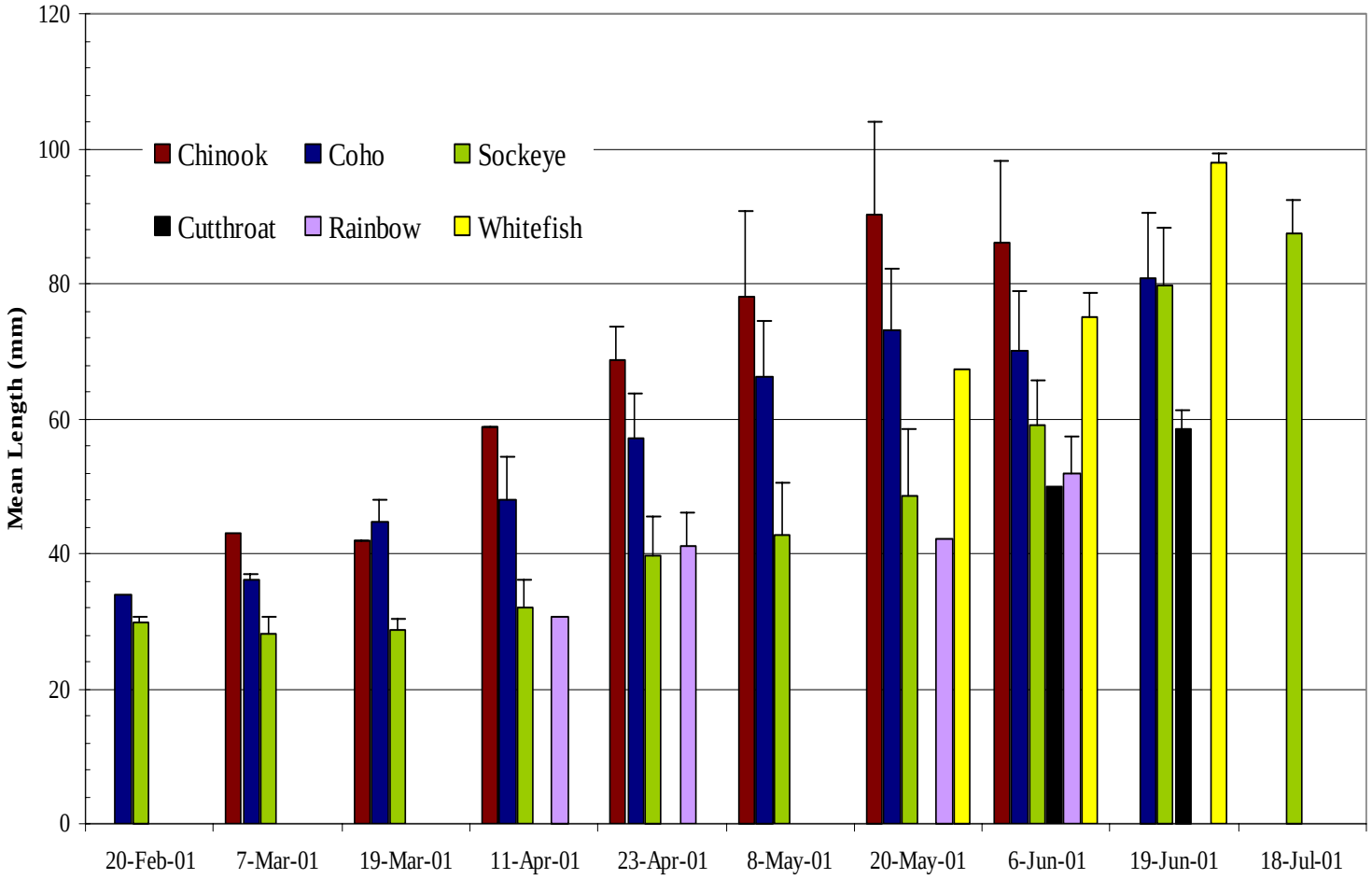
RESULTS: Existing Condition



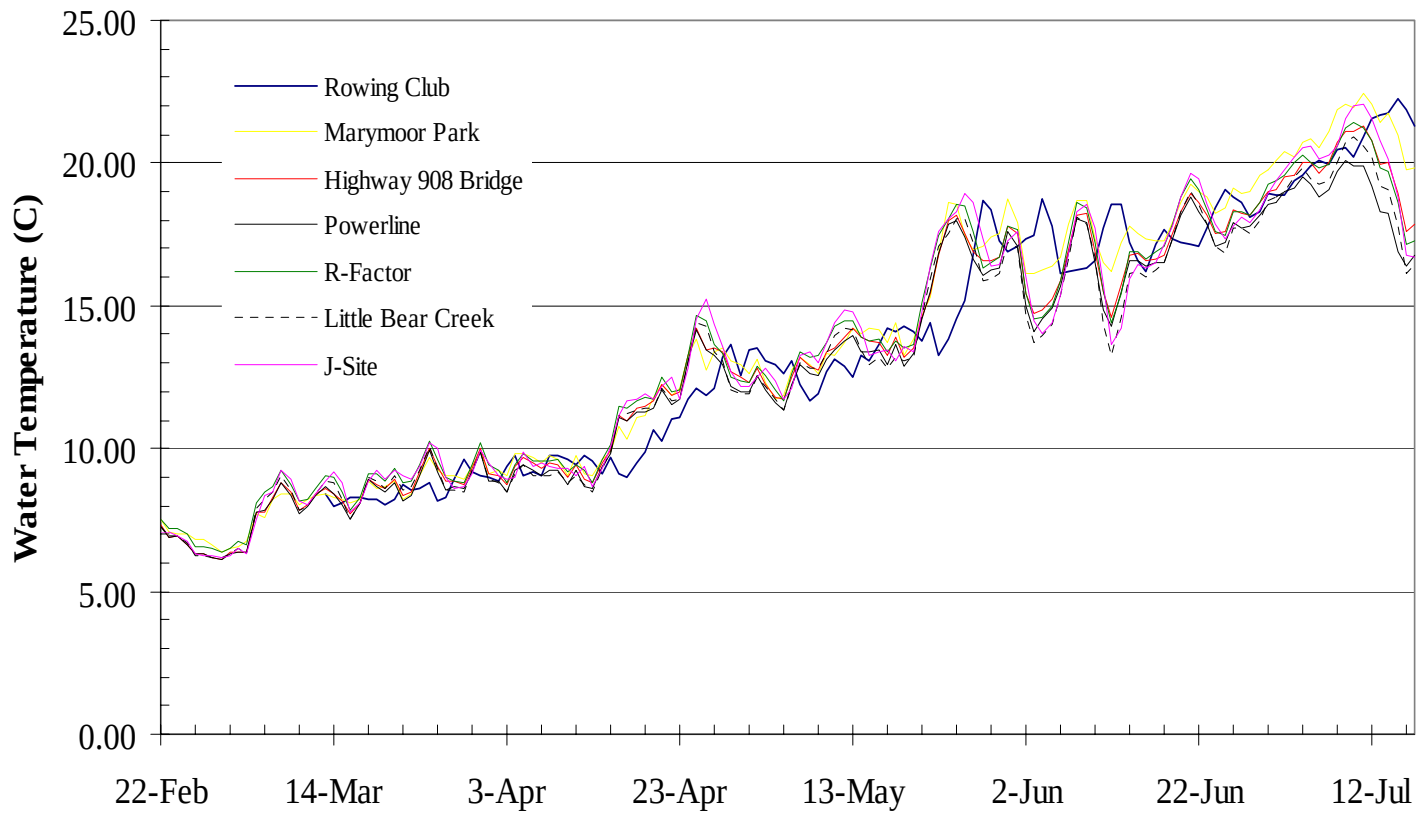
RESULTS: Setback Levees



RESULTS: Relative Growth



RESULTS: Water Temperature



CONCLUSIONS

- Significant difference in numbers of juvenile salmonids at reach level
  - Reach 1 >Reach 2 > Reach 3 > Reach 4
- Relatively short chinook residency period
  - Low percentage of recaptures (extended tributary rearing)
    - Chinook = 0.7%
    - Coho = 13.5%
- Significant difference in juvenile salmonid use of created habitats at both site and reach levels
  - Setback Levee > Setback Levee w/ LWD > LWD

CONCLUSIONS

- Use of setback levees was corroborated by pilot study conducted in 2000 (late May through July)
- Juvenile salmonids concentrated in areas w/ low bank angle
- Juvenile salmonids concentrated where small woody debris existed
  - SWD is relatively scarce throughout all sites
- Setback levees appear to be preferred alternative
- Water temperatures appear to limit rearing period
  - Mean daily water temps > 15°C by late May