Effects of Exports on Survival of Chinook Smolts Emigrating Through the Delta

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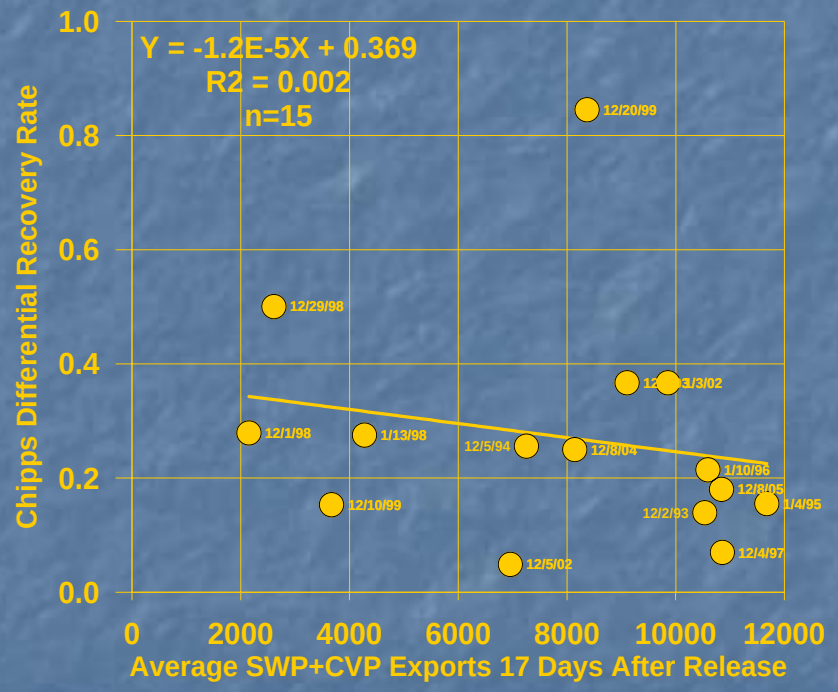
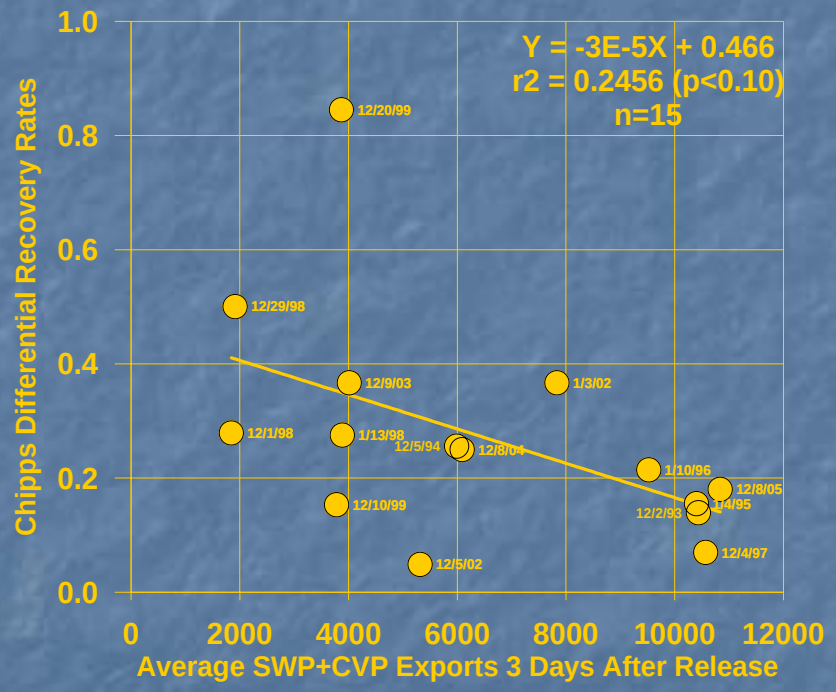
2006 EWA Review

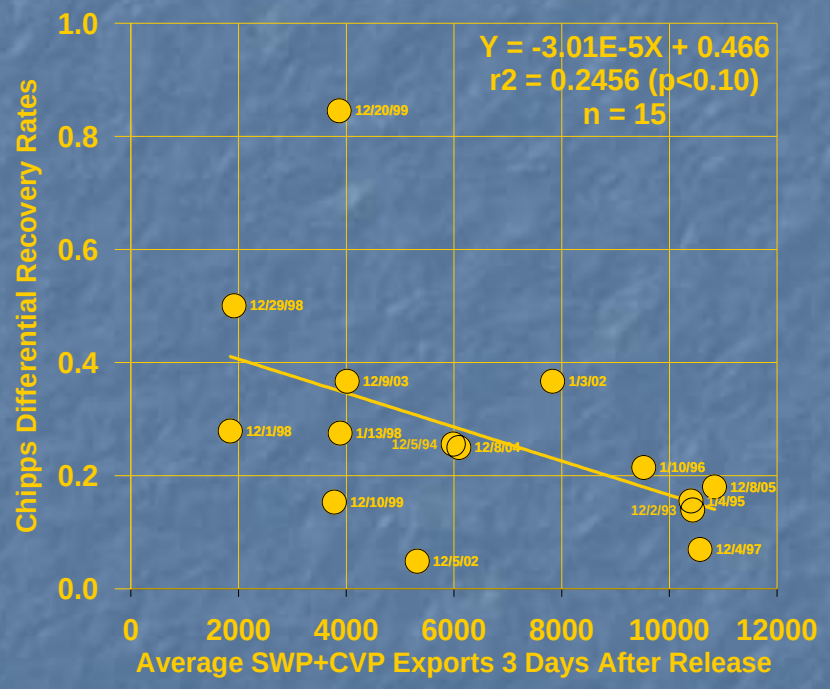
- ***Sacramento Basin***
  - ***Older Juvenile Chinook***
    - ***AKA Delta Action 8***
  - ***Younger Juvenile Chinook***
- ***San Joaquin Basin***
  - ***Younger Juvenile Chinook***

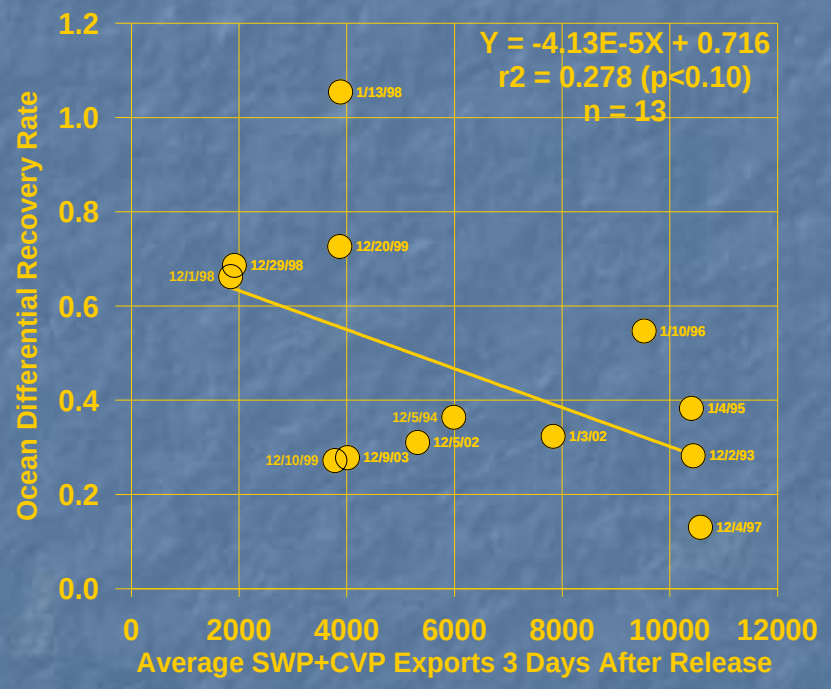
Sacramento Basin, Older Juvenile Chinook





Sacramento Basin, Older Juvenile Chinook

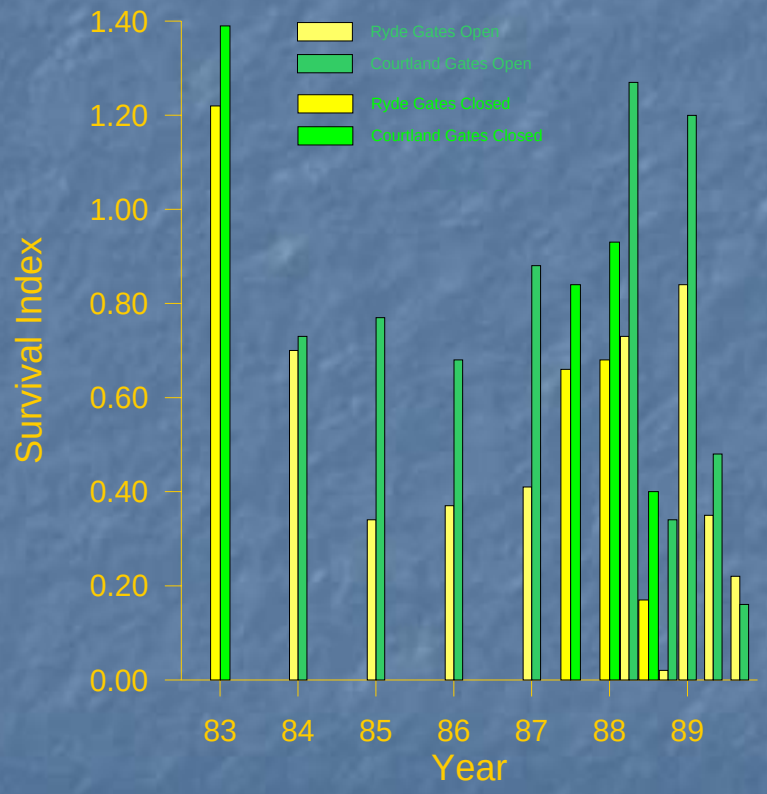


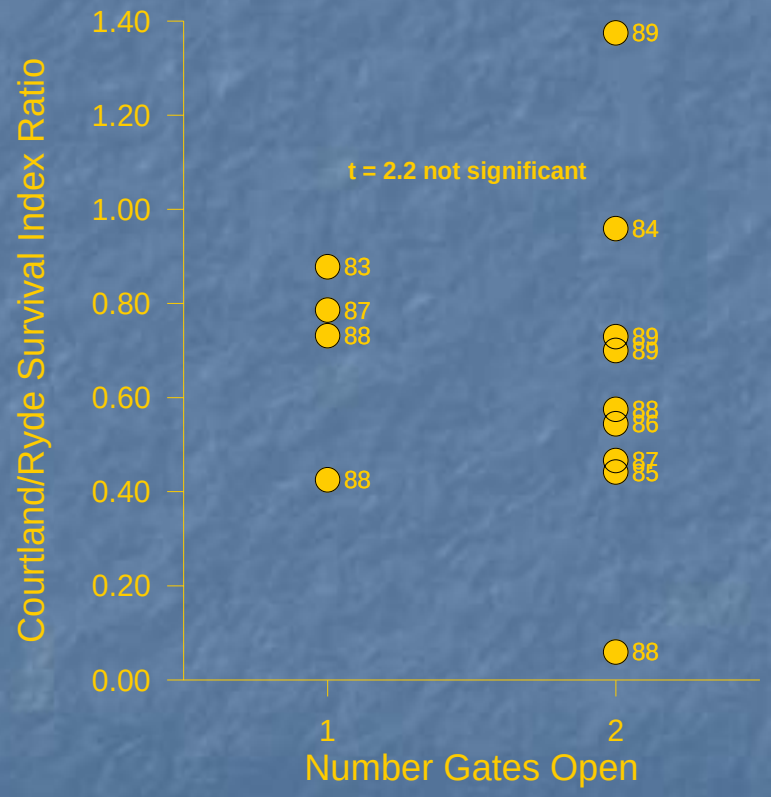


Sacramento Basin, Younger Juvenile Survival

- Modeling Paired Release-Recovery Data….With Application To Marked Juvenile Salmon, Newman, 2003
  - Variables of management interest
    - Water flow – significant both models
    - Water temperature – significant both models
    - SWP&CVP exports – significant "hierarchical" not significant "pseudo-likelihood" models
  - Report available at http://www.delta.dfg.ca.gov/jfmp/PatFiles/Delta_Action_8_attachment_8.pdf

Sacramento Basin, Delta Cross Channel

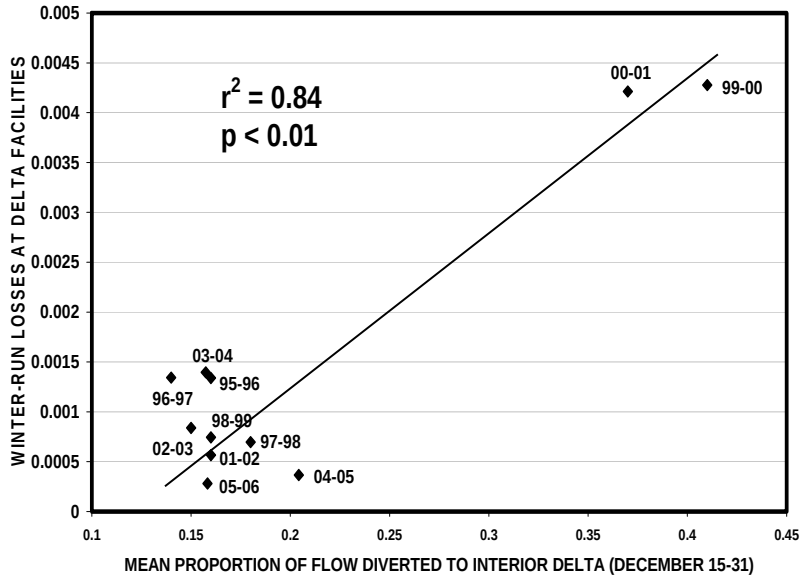


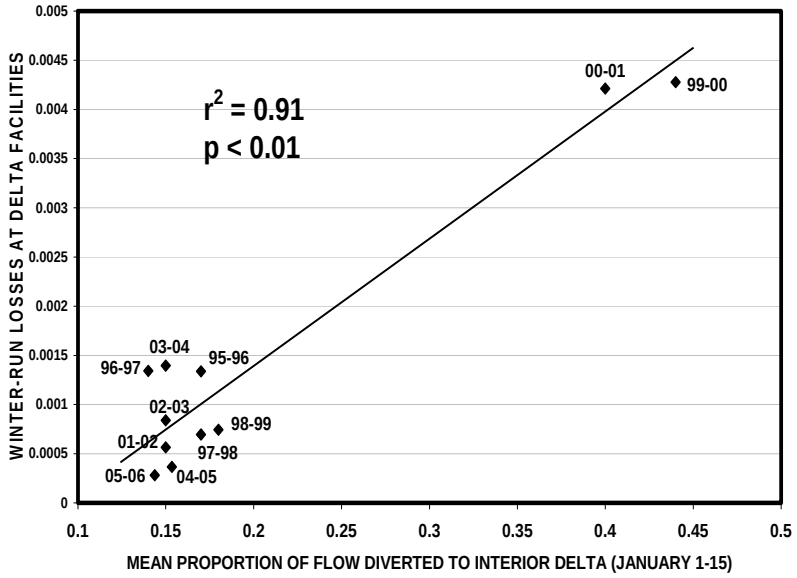


Sacramento Basin, Delta Cross Channel

- ***Modeling Paired Release-Recovery Data….With Application To Marked Juvenile Salmon, Newman, 2003***
  - ***Cross Channel Gates negatively related to survival***
    - ***Significant in "hierarchical" model***
    - ***Not significant in "pseudo-likelihood" model***

Sacramento Basin, Delta Cross Channel

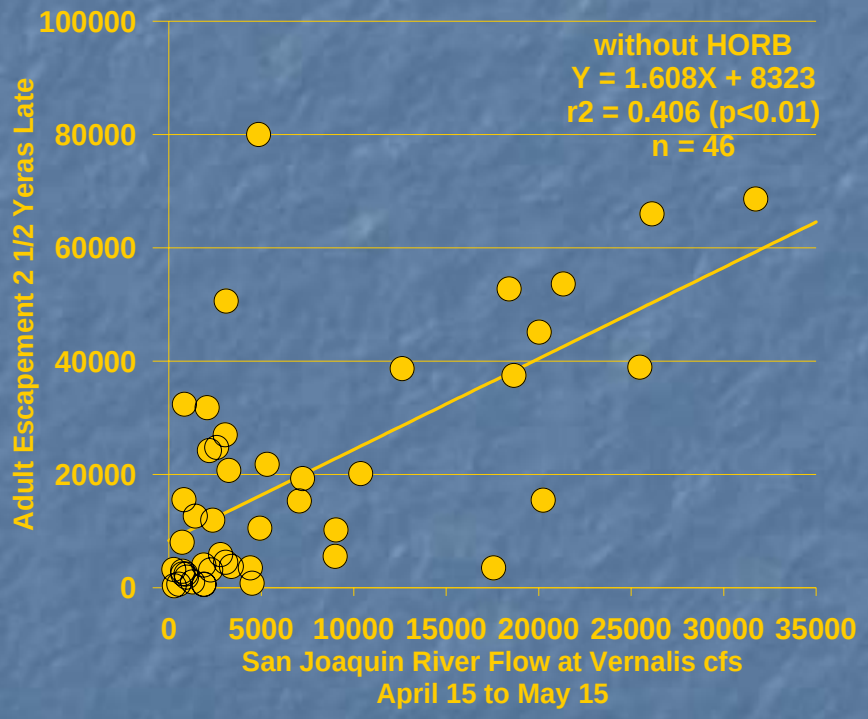


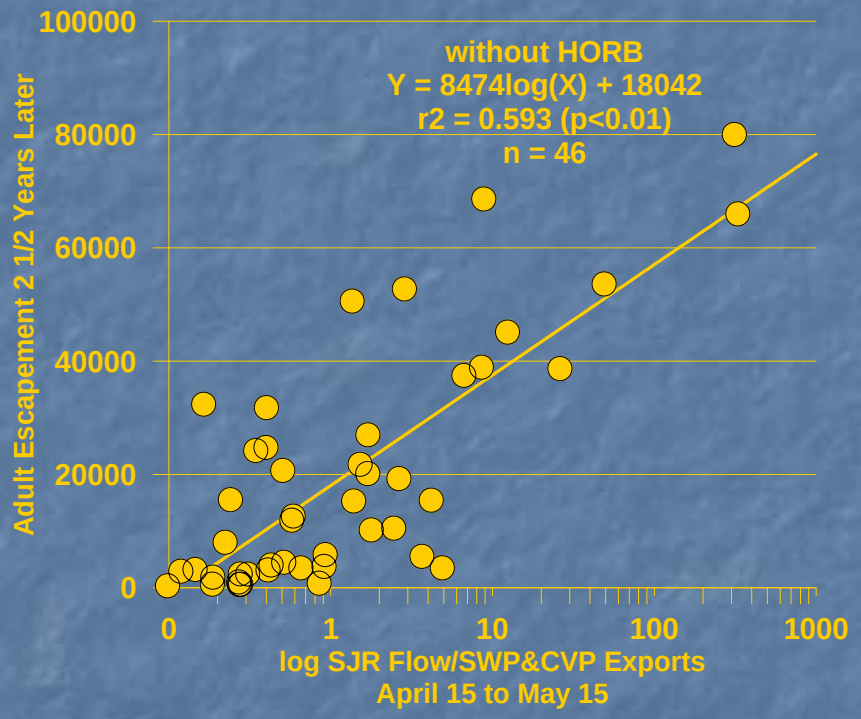


San Joaquin Basin, Younger Juvenile Survival

- Survival from above Old River to below Old River
  - Not correlated to exports with or without HORB
  - Not related to SLR flow/exports with or without HORB

San Joaquin Basin, Younger Juvenile Survival





What Have We Learned Since The 2001 EWA Review?

- Uncertainty exists in all our conceptual models
- We have found that exports adversely effect Sacramento juvenile survival but it would take a large change in exports for a small increase in survival
  - Hydrodynamics at junctions is more complex than we realized
- We haven’t found how exports directly effect San Joaquin juvenile survival
  - Hydrodynamics at junctions is likely more complex than we realized