

# Perspectives on the EWA Science Panel and the first four years of the EWA



BJ Miller

November 9 2004

# Why do water users support EWA if doubts about effect?

➤ Water users have serious questions about Delta water project requirements

- Small benefit/cost ratios
- Unfavorable comparison with upstream and ocean actions
- Major water supply effects
- Little effect on species recovery and jeopardy

# Why do water users support EWA if doubts about effect?

- Rationale for EWA is same as for regulatory baseline
- Therefore, concerns about regulatory baseline = concerns about EWA
- But, clear that no deals can be made without EWA
- If MAs are going to regulate per regulatory baseline +, then EWA is a great idea?
- Does it help fish, commensurate with its cost?  
That's a different question.

# The EWA dilemmas

➤ Question the population level effects of the EWA and you are questioning the deal-maker for water project facilities as well as the regulatory baseline, which underlies the Accord, the ROD, and several other more recent agreements/actions

Nevertheless, that is the  
job of this Panel



# What is good science for the EWA?

⇒ Not:

- How good everybody is feeling about cooperation
- How many committees there are and what they do
- How assets are acquired
- The history of EWA (for the 4th time)
- All the tiers
- Etc., etc.

# What is good science for the EWA?

➤ It is, primarily:

- Population level effects of EWA actions
- Measured as fractional population changes in affected life stages of target fish
- Consideration of non-linearities (density dependence)
- Order of magnitude comparison with other actions (upstream and ocean)

# Estimating fractional changes in population of affected fish

- ↪ Every action is at least partly justified by statistical relationships between action and survival or abundance, e.g.:
  - Abundance (outflow) vs.  $X_2$
  - Survival vs. exports
  - Survival vs. XCG closing
- ↪ These relationships are relied upon to justify action
- ↪ Can't stop there--take partial derivative of effect with respect to action to get sensitivity

# Estimating fractional changes in population of affected fish

- Must apply to entire population of life stage
- Must consider uncertainties
- Must consider subsequent significant factors of unknown origin (late summer food limitation for delta smelt, ocean conditions for salmon)

# The focus of this Panel

- ↪ What are these relationships?
- ↪ Are the statistics valid?
- ↪ Do the relationships make sense?
- ↪ What are the uncertainties?
- ↪ What are their partial derivatives?
- ↪ What do they say about population changes to the affected life stages?
- ↪ What about other actions?

# For example:

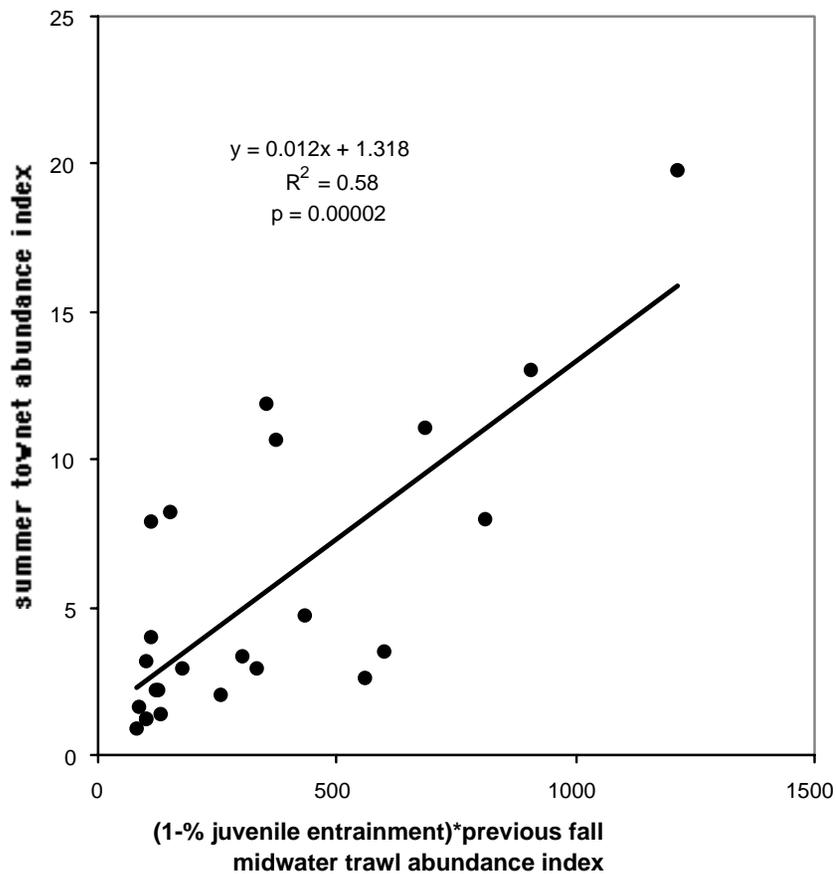
- What did Newman do and what does he say about what he did?
- What are the statistics behind Pat's correlations?
- What is VAMP doing if 85% of smolts die even with good conditions?
- Is there any statistically significant relationship between XCG closure and surviving fraction to Chipps Island?
- If there is no (almost no?) relationship between juvenile and sub-adult delta smelt population, how important is juvenile entrainment?

# The Panel's job

- Get serious about population level effects
  - Subcommittees on Newman, Brandes, VAMP, direct mortality, delta smelt entrainment effects
  - Call on agencies and stakeholders

Relationship between percentage of juveniles not entrained and subsequent indices

summer townet abundance index  
vs.  
(1-% juvenile entrainment)\*(previous fall  
midwater trawl abundance index)  
1981-2003



fall midwater trawl abundance index  
vs.  
(1-% juvenile entrainment)\*(previous fall  
midwater trawl abundance index)  
1981-2003

