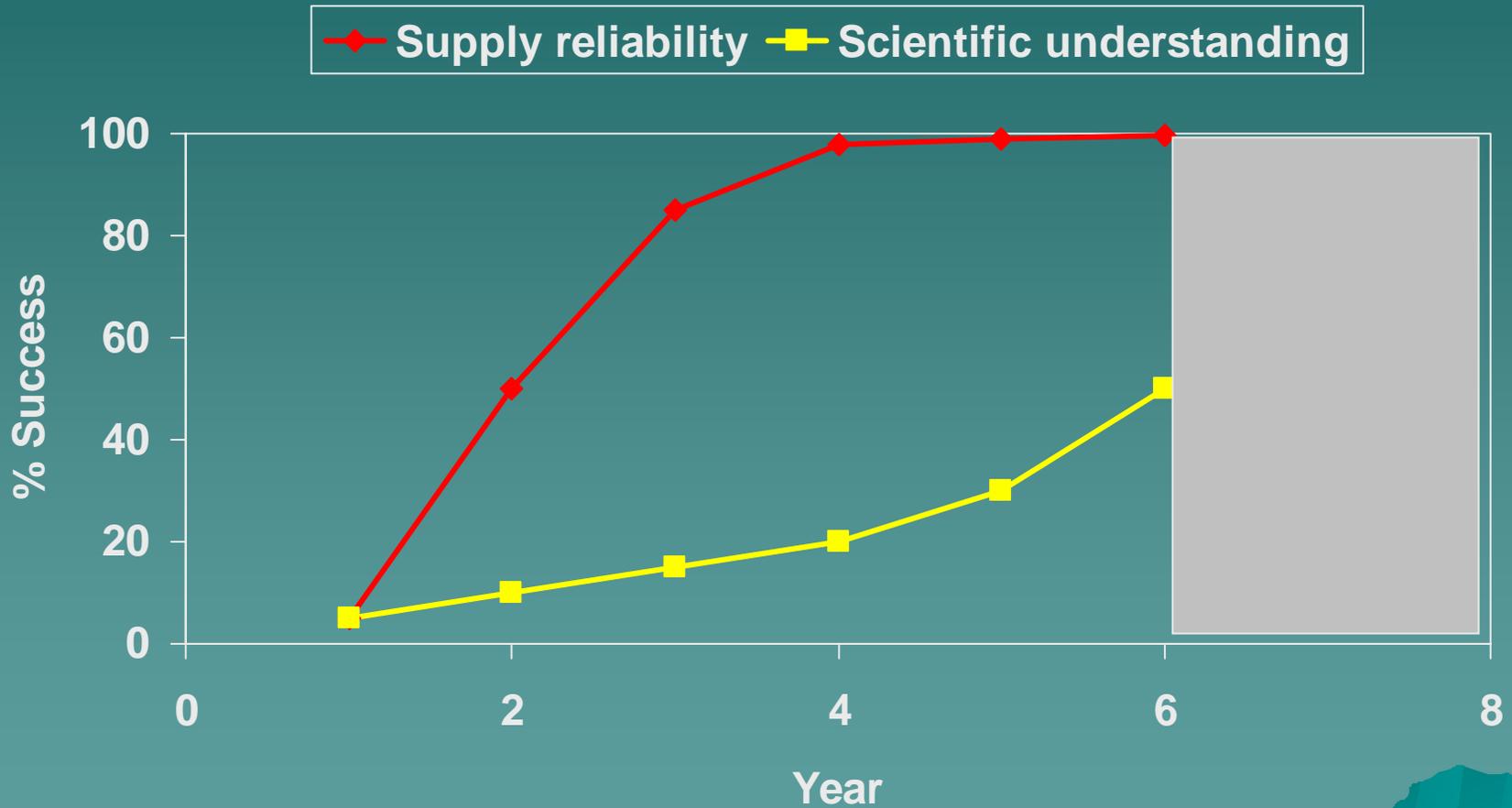


# 2006 EWA Science Panel Review



# CM of EWA progress



# Timeline

- ◆ November 28-30, 2006
  - Review and initial findings
- ◆ January 31, 2007
  - Written Panel findings
- ◆ February 22, 2007
  - Panel findings presented to ISB
- ◆ April 2007
  - Draft SP/Agency response
- ◆ June 2007
  - ISB input to SP/Agency response



# The ISB role

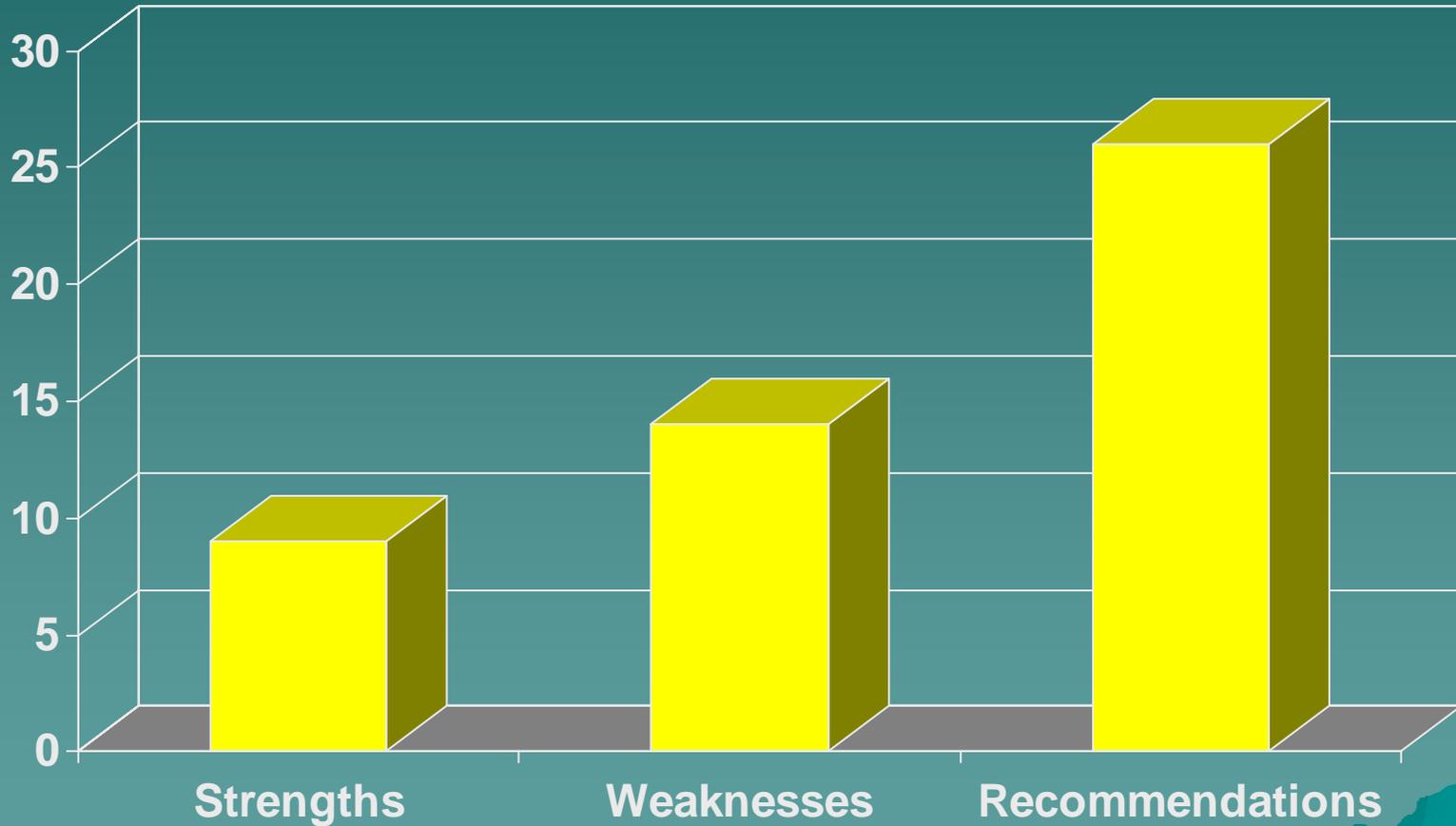
- ◆ Today
  - Overview Panel Report
  - Due in April
- ◆ June ISB meeting
  - Was our response adequate/appropriate?



# The Review Panel charge

- ◆ Seven questions + “Action Matrix”
  - Enough water to reduce impacts?
  - Effectively contributed to recovery?
  - Enough info to see population effects?
  - Current monitoring sufficient?
  - What other science is needed?
  - What should be considered in 2007?
  - What should be considered long-term?

# 2006 Review



# Recycled praise

- ◆ Water supply reliability
- ◆ Public input
- ◆ CALFED workshops
- ◆ Multi-tiered review structure

# New positive findings



New decision  
tools

# New positive findings



New decision  
tools



Increased  
research  
funding

# New positive findings

New decision  
tools

Increased  
research  
funding

Improved  
scientific  
approach

Improved  
statistical  
analysis

# New positive findings

New decision  
tools

Increased  
research  
funding

Improved  
scientific  
approach

Improved  
statistical  
analysis

POD inputs

# New positive findings

New decision tools

Increased research funding

Ultrasonic tagging of salmonids

Improved scientific approach

POD inputs

Improved statistical analysis

# Panel answers to group's questions

- Enough water?
  - For take reduction, but not all goals, need performance measures
- Effective for recovery?
  - Unclear intent, currently unanswerable even IF fish had rebounded
- Enough data (3 versions)?
  - Maybe – w/ rephrased questions
  - Statistical rigor
  - Reconcile disparate views

# Panel answers to group's questions

- ◆ Science in long-term EWRPs?
  - Move toward single program
    - ◆ Comprehensive review
  - Life cycle approach
    - ◆ Population modeling and gaming
  - Dedicated staff and resources

"In a future environmental water program, either aiding recovery is a goal and sufficient water is allocated, or the goal should be revised so expectations and resources are compatible."

"It is time to revisit gaming to help size and "optimize" the mix of actions under different conditions (e.g., wet versus dry years) in a future environmental water program. A new gaming exercise can now include biological life-cycle models that were not available ten years ago."

# Resources Agency Action Matrix

- ◆ General approach suitable
  - Not an experiment
- ◆ Needs
  - Conceptual model(s)
  - Explicit hypothesized mechanisms
  - Defensible analyses of detection times
  - Uncertainty assessments
  - Additional monitoring

# Programmatic Recommendations

- ◆ Either size to recover or change intent
- ◆ Integrate E-water programs
- ◆ Develop future programs in life cycle context
- ◆ EWA needs a staff with funding
- ◆ San Joaquin River flexibility



# Process Recommendations

- ◆ Develop EWA performance measures
  - General
  - Critical life-stages
- ◆ Web-linked review documents
- ◆ Continue every other year review



# Science Recommendations

- ◆ Earmarked research funds
  - Fish behavior vs. flow, water quality
  - Fish routing models
  - Quantify indirect effects
  - Delta smelt spawning habitat
- ◆ Hypothesis-driven analyses
  - Reconcile disparate views of 'same' data
- ◆ Refine decision-support tools
  - Incorporate new info/life cycle context
  - Develop multi-species prioritizations
- ◆ More ptm (develop, publish, use)
- ◆ Peer review
- ◆ Additional workshops
- ◆ VAMP review program
- ◆ Revisit "gaming"
  - Add biology and life cycle context



# Questions?

