

# Operational Scenarios for Stage 1

DEFT-NoName Coordination Team

November, 1998



## Team Roles

**DEFT**

Suggest protective measures and assess environmental benefit/impact of approaches

**DNCT**

Develop new approaches to environmental and water supply improvement based on operational flexibility

**NoName**

Suggest candidate water supply measures and determine benefit/impact of approaches



# ***DEFT Fish Concerns***

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- Delta smelt adults (entrainment in Dec-Mar)
- Delta smelt young (take exceeded in late May/early Jun of recent years, concern Apr-Aug)
- SJ salmon fry (high takes following high flows in Jan/Feb)
- SJ salmon smolts (portion of outmigrants no covered by VAMP)
- Spring-run yearlings (outmigrating in Nov-Jan)
- Steelhead outmigrants (period variable from Feb-May, but passage swift)
- Striped bass young of year (especially May-Jul)



# ***Ways to Reduce Fish Entrainment Effects***

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- Increase Sacramento River flow
- Close Delta Cross Channel
- Increase San Joaquin River Flow
- Head of Old River Barrier operation
- Operate Delta Export pumping to limit direct and indirect mortality



# Potential Controls on Delta Exports

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- Banks Permitted Capacity
- Required Outflow
- Manage Exports
  - Export/Inflow Ratio
  - QWEST Limits
- Modify delivery patterns
- Fish Triggers



# Development of Scenarios

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DEFT

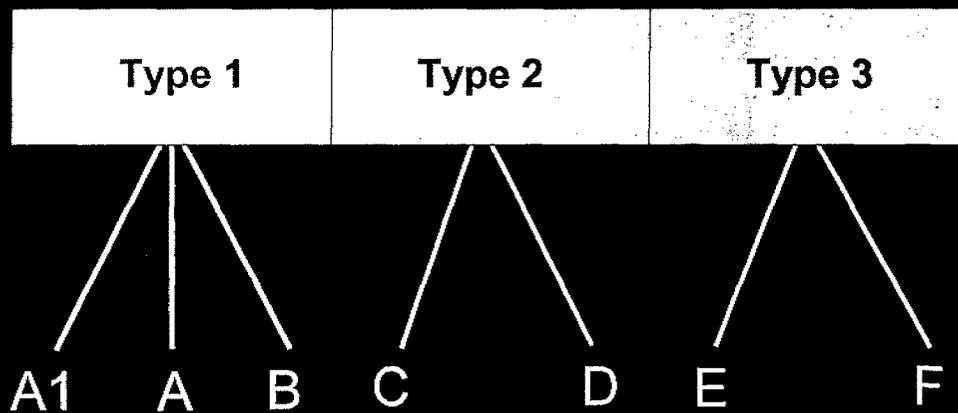
## DNCT

### Stage I Scenarios

- Common Programs
- Habitat
- Facilities
- Operations
  - Non-structural
  - Biological Criteria

NoName

# DNCT Scenarios



## ***Three Types of Scenarios to Increase Fish Protection***

- Type 1: Impose more restrictive flow and export standards that have on and off triggers. Water supply balance provided by relaxation of standards when appropriate and development of new supplies.
- Type 2: Environmental water generated by relaxation of existing standards and sharing of new supplies. Relaxations and use of environmental water account defined by an Ecosystem Manager.
- Type 3: Impose export restrictions based on fish salvage and monitoring triggers. Additional fish protection measures provided by environmental water account generated by new water supplies.



# *Biological Science Issues*

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- Importance of Exports
- Importance of Habitat
- Importance of Flows



# *Importance of Exports*

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- Do export related salvage losses and entrainment effects have a significant effect on populations?
- How important relative to other sources of mortality?
- How important is export induced indirect mortality?
- How important is entrainment of eggs and larvae?
- Role of exports in estuarine foodweb?



# *Importance of Habitat*

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- Benefits of habitat improvement versus entrainment reductions
- Potential benefit of improving habitat in the south Delta
- DEFT agrees on habitat list and priorities



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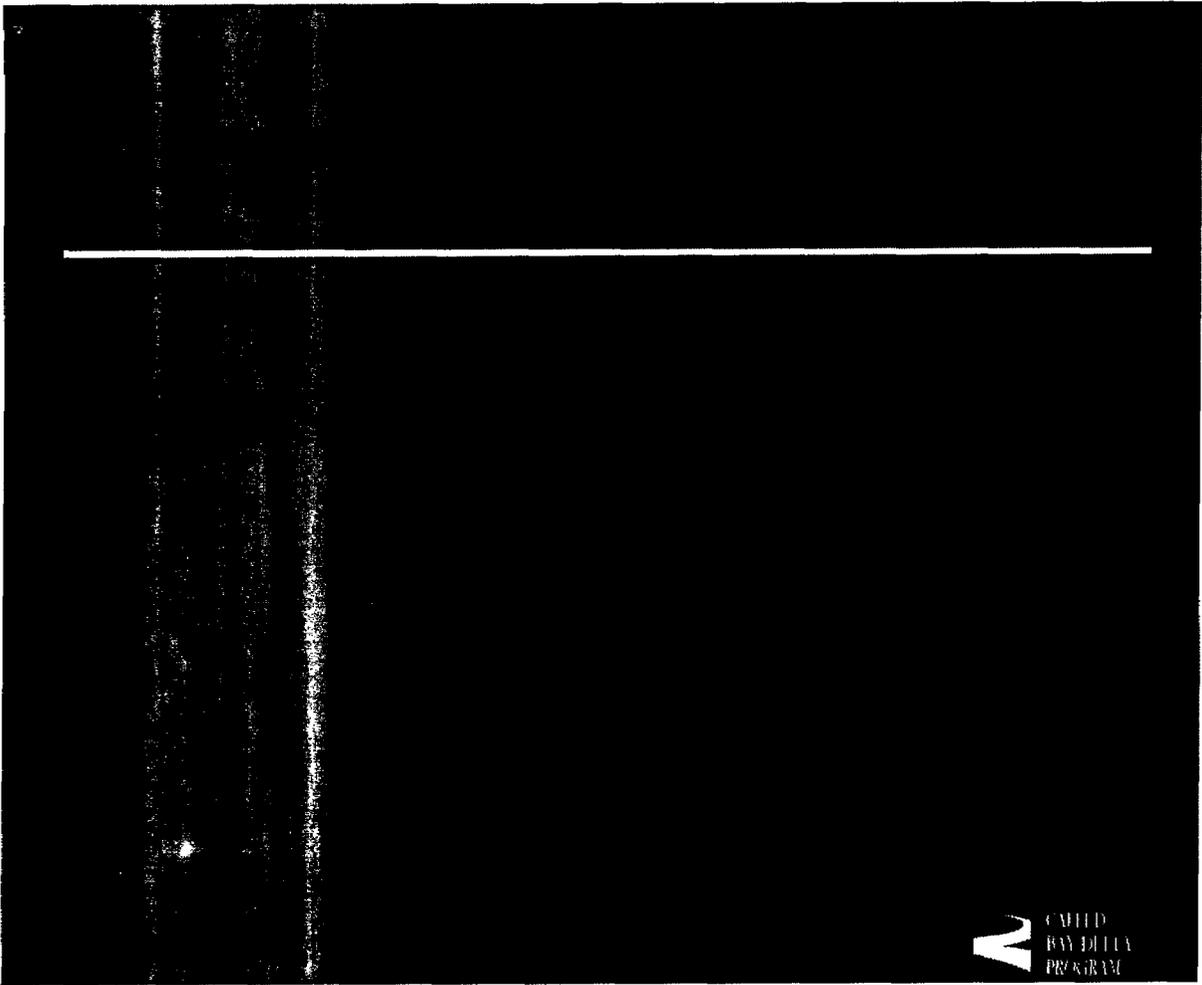
# *Importance of Flows*

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- How important are flows in fish migration?
- VAMP Adaptive Management Experiment
- Need active adaptive management interventions-Ecosystem Restoration Core Team



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