

Proposed Scenario for Game 3a
January 19, 2000
David Fullerton

Overview

- Assets and asset distribution are identical to Game 1a (early stage I). That is, new assets are controlled entirely by Projects:
 - Joint Point of Diversion
 - Delta Mendota Canal/ California Aqueduct Intertie
 - Limited expansion of Banks pumping limits
 - Option to purchase 100 kaf in first two years of drought
 - Demand shift option of 60 kaf
- Fish managers may relax E/I ratio.
- B (2) is accounted for in the same way as Game 1(a).
 - Upstream releases between October 1 and January 31 count against b(2) unless reservoir spills.
 - Upstream releases between February 1 and September 31 count against b(2). Water may become outflow if need declared by fish managers without additional b(2) cost.
 - All export reductions off model baseline count against b(2).
 - Fish managers may transfer leftover water under Section III of b(2) decision.
- However, fishery protection is not limited by b(2) and E/I relaxations. Fish managers release whatever water they deem necessary for fish protection from upstream reservoirs and cut diversions out of the Delta to the extent they deem necessary. The Projects will use facilities to compensate to the best of their ability during the game.
- Game should run entire 1981 – 1995 sequence.
- Proposed to run Game 3b in same way.

Methodology similar to Game 1a, except not limited by b(2) budget. Each year:

1. *Equalize initial storages.* Set initial storages in Shasta, Oroville, Folsom, New Melones, and San Luis at carryover values from last year's Daily model for all DWRSIM and Daily Ops model runs. For first year, use initial storage from appropriate DWRSIM run.
2. *Run DWRSIM for WQCP and D 1485.*
3. *Calculate CVP export impacts from WQCP.* Total CVP impacts are derived by subtracting CVP D 1485 exports from WQCP exports. The b(2) cost is the lesser of the calculated impact or 450 kaf.
4. *Run DWRSIM to create gaming baseline for the year.*

5. *Run Daily Model.* With Daily Model, apply upstream flows, if desired.
6. *Subtract any upstream flow costs from b(2).* Reservoir spills before February 1 erase b(2) AFRP costs from that tributary.
7. *Reevaluate exports.* Increase Delta inflows to reflect upstream AFRP releases.
8. *Make export cuts as necessary.* If total b(2) cost exceeds 800 kaf (or 600 kaf), keep a running tally of water debt incurred.
9. *Optimize Project storage levels.*
10. *Apply water purchase and demand shift tools, if needed.* If b(2) actions reduce San Luis storage below the Daily baseline level and cause a low point problem, then apply these tools to support storage levels.
11. *Reduce contract deliveries, if necessary.* If additional storage in San Luis is still needed to regain the baseline Daily storage levels and avoid a low point problem, then delivery reductions will be made.
12. *Use final storage levels as inputs to next year of modeling.*

Analysis

- Track export levels and compare to various benchmarks: Game 1a; Accord; D 1485; Historic.
- Track storage "debt" created by fish actions. Correlate with export cuts to estimate minimum size of EWA account needed to achieve full fish protection without impacts beyond b(2).
- Estimate absolute levels of fish protection using template.
- Estimate improvements in fish protection compared to Game 1a.

Issues

- The problem noted in Games 1a and 1b with distortions in storage levels leading to delivery changes in subsequent years will be exacerbated with this game. This increases importance of comparing results to Game 1a, rather than just looking at absolute reductions in exports compared to baseline each year.