

## **APPENDIX B ("15-Mile Reach PBO")**

### **ACCOUNTING FOR WATER DEPLETIONS**

This Appendix lays out the accounting system for determining changes in water depletions addressed in this biological opinion. This accounting process will quantitatively measure increases in water depletions as they actually occur and identify when 60,000 and 120,000 acre-feet/year of new depletions have actually occurred. Water depletions are defined as the reduction in the quantity of water reaching critical habitat of the endangered fishes.

- 1) Every 5 years beginning in 2005, the Service and the State will jointly collect consumptive use data and other data necessary to update either the State's CRDSS Consumptive Use Model or the State's CRDSS Colorado River Mainstem Water Right Planning Model "C1 run" as described in Appendix F. Data collected would include irrigated acres, climatic data needed to run the "Modified Blaney-Criddle" consumptive use model, as well as data on evaporation, municipal and industrial uses, and other consumptive uses identified in Bureau of Reclamation's consumptive uses and losses report. The Service would also provide a list of projects and new depletions consulted on during each 5 year period. The updated information will be submitted to a technical group (similar to the technical group which worked on the PBO) for peer review. The technical group will determine which depletions have actually occurred, because only those depletions which have actually occurred will count against the 120,000 acre-feet/year. Once the technical group and any other interested entity has verified the depletions, they will be submitted to the Recovery Program for final
- 2) Beginning in 2005, the State's CRDSS Consumptive Use Model will be run and a consumptive use and losses report will be developed. This report would verify the present level of depletions.

The programmatic biological opinion has determined that with implementation of recovery actions and an appropriate fish population response, the additional depletion of 120,000 acre-feet/year is not likely to jeopardize the endangered fishes or destroy or adversely modify critical habitat. The accounting system for determining when depletions reach 120,000 acre-feet/year will avoid penalizing entities that implement water conservation and reuse practices (for example, entities will maintain their present level of demand in the model). The biological opinion does not mandate water conservation or reuse. However, if water conservation and reuse practices are implemented it will take longer to deplete 120,000 acre-feet/year. Therefore, if all recovery actions are implemented and there is an appropriate fish population response, the biological opinion could provide Endangered Species Act compliance for a longer period of time.

- 3) In order to avoid potential problems associated with annual fluctuations due to variable climatic factors, as well as model and data changes, all determinations of increases in depletions will be made using the long-term averages since 1975. The CRDSS Colorado River Mainstem Water Right Planning Model will be used, and two model runs will be required.

RUN 1.

The  $C_1$  scenario will be run for the updated study period (e.g., 1975 to year  $n$ , where year  $n$  would be 2005, 2010, 2015, etc.) at the 1995 level of demand for the entire study period.

RUN 2.

A second model run (call it  $C_2$ ) would be made for the same updated study period using year  $n$  demand levels over the entire period. Comparing the difference between the long-term averages of the two model runs ( $C_1$  &  $C_2$ ) will identify the increase in depletions over that time period. Model calibration and verification will be done with each update. There are no “cap” amounts identified in this process; the trigger is whether or not the difference between the two model runs exceeds either the 60,000 acre-foot or the 120,000 acre-foot levels identified in this Biological Opinion. Also, the criteria to determine positive or negative fish population responses is presented in the reinitiation notice of this biological opinion and in Appendix D. As described in the reinitiation notice, the status of fish populations will be reviewed prior to new depletions reaching 60,000 acre-feet/year. This review will begin when actual new depletion levels reach 50,000 acre-feet/year or the year 2015, whichever comes first. Therefore, every 5 years it will be determined if new depletions are approaching

- 4) A report will be prepared documenting the assumptions used and changes in depletions and other model results. The report will be prepared on a water year basis October 1 to September 30. The report will also document any changes made to the model such as updated demand information.
- 5) Reports will be provided on a five year basis. The report covering the period 2001-2005 will be completed by December 31, 2006. The report covering the period 2006-2010 will be completed by December 31, 2011. The reason for the one year lag is to allow the data for the previous year to be reduced and finalized.
- 6) This process as currently envisioned has the potential to become labor intensive depending on the number of model changes and degree of “backcasting” involved. Costs or appropriate cost-share arrangements will be worked out during the development of the Recovery Program’s annual work plan. A Scope of Work will be prepared for the FY 2005 Recovery Program’s work planning process to fund the development of the depletion report and model runs. Furthermore, because of cost considerations, the process identified above is subject to change with the agreement of the Recovery Program’s participants through the current management process.