

United States Department of the Interior
Statement Before the State Water Resources Control Board
Review of 1995 Delta Water Quality Control Plan
Topic #7: Sacramento River at Rio Vista Flow Objective
January 24, 2005

A decade ago, the State Water Resources Control Board (SWRCB) adopted the Delta Water Quality Control Plan (1995 WQCP), which included several flow objectives to protect beneficial uses of river and Delta waters by the State's fishery resources. The Sacramento River at Rio Vista flow objectives apply to the fall months and are primarily intended to maintain sufficient net downstream flow in the lower Sacramento River to facilitate adult Chinook salmon upstream migration. These flow standards also benefit federally listed adult steelhead during their upstream migration and federally listed juvenile winter-run, and spring-run Chinook salmon, and unlisted late fall-run Chinook salmon during their downstream migration.

Department of the Interior (Interior) agencies have observed in the OCAP modeling that achieving the Rio Vista flow objectives may create conflicts with other operational objectives and water quality parameters in the dry and critical years. Releases from project reservoirs may need to be increased to meet the required flow at Rio Vista in a period during which flow fluctuation is a concern. This situation may be exacerbated by the rice decomposition program which has increased depletions of Sacramento River flow in this same period. In extreme circumstances, these releases and lowered reservoir levels may affect the Projects' ability to achieve temperature objectives for anadromous fish in the following year, including threatened or endangered salmon species.

Interior recognizes that in the future there may be competing needs between upstream and downstream (Delta) fishery objectives. Thus consideration should be given on how to best balance competing fishery needs while at the same time ensuring adequate flows to protect declining fishery resources. Interior proposes to implement the Sacramento River at Rio Vista flow standards in a flexible manner, under certain circumstances, using real-time analyses and consultation and communication among all five agencies (the Bureau of Reclamation, the Department of Water Resources, the Fish & Wildlife Service, NOAA Fisheries, and the Department of Fish and Game), with the goal of balancing the competing needs of fishery objectives.

Background

The primary purpose of the 1995 WQCP's Sacramento River at Rio Vista flow standard is to provide sufficient net downstream flow in the lower Sacramento River to facilitate adult Chinook salmon upstream migration with concurrent benefits for adult steelhead upstream migration and juvenile winter-run, spring-run, and late fall-run Chinook salmon downstream migration. The standard calls for meeting minimum flows at Rio Vista of (1) 3,000 cubic feet per second (cfs) in September; (2) 3,000-4,000 cfs in October; and (3) 3,500-4,500 in November and December.

Biological Basis. The Rio Vista flow objectives apply to the fall months and are designed primarily to maintain a sufficient net downstream flow in the lower Sacramento River environment for adult Chinook salmon upstream migration (OCAP pg 2-15, 2004). The salmon standard reflects the minimum flows which Fish and Game believes would be suitable for adult salmon migration (WQCP, August 1978). In addition, the Rio Vista flow objectives will provide concurrent benefits to the federally listed adult steelhead that are also migrating upstream through the Delta to their spawning habitat in several Central Valley streams. Furthermore, federally listed juvenile winter-run, spring-run, and unlisted late fall-run Chinook salmon migrate downstream toward the ocean in the fall and winter months. The Sacramento River at Rio Vista flow standards will contribute flows for their downstream migration, as well.

Returning adult salmonids are rheophilic and rely on water velocity cues for stimulating upstream migrations. Maintaining minimum lower Sacramento River flows will provide appropriate cues for adult fall-run Chinook salmon (Biological Explanation of the Joint Water Users Proposed Bay-Delta Standards, pg 2-25, November 1994) and adult steelhead. A review of the scientific literature on Chinook salmon and other native fishes reveals the critical need to maintain adequate net downstream flow during their upstream and downstream migration and as well as for fish rearing in the Delta and Suisun Bay. The Fish and Wildlife Service will provide a compact disk (CD) to the SWRCB with several biological references.

The Sacramento River at Rio Vista flow objectives are incorporated into the Bureau of Reclamation's new OCAP project description and associated Biological Assessment and the Fish and Wildlife Service's OCAP Biological Opinion. The NOAA Fisheries biological opinion on the Long-Term Central Valley Project and State Water Project Operation, Criteria, and Plan (OCAP) under the Endangered Species Act for protection of listed salmonids below project facilities also includes temperature targets for steelhead habitat in the American River and winter-run Chinook salmon habitat in the upper Sacramento River. In the event these temperatures are not met, the Sacramento River Temperature Task Group will meet to determine if additional actions can be taken to protect listed salmon. If the temperature targets are not met, then re-initiation of consultation may be required.

Operational Challenges. Meeting the Sacramento River at Rio Vista flow standard may require the Central Valley Project and the State Water Project (Projects) to make storage releases or to bypass flows that would otherwise be diverted to storage. Such releases or bypasses can be of a magnitude that results in lower springtime storage levels in Project reservoirs. The result of such lower storage levels is a smaller pool of coldwater resources for later in the year to meet temperature requirements in the rivers below project reservoirs. The management of the releases may also result in greater than desired fluctuations of flow in the upper Sacramento River, Feather River, and lower American River. Closing the Delta Cross Channel gates is another option to provide more flow at Rio Vista. However, closure of the Delta Cross Channel gates in dry conditions is likely to cause an increase in salinity in the South Delta. This option would only be exercised for short periods of time and may need to be balanced with export reductions to maintain water quality standards.

Attached is chart prepared from modeling results showing the months and frequency that the Rio Vista standard is expected to control project operations.

Recommendation

Interior believes the Rio Vista flow objectives remain important protections for migrating adult Chinook salmon and steelhead, as well as emigrating juvenile winter-run, spring-run and late fall-run Chinook salmon. However, compliance with the lower Sacramento River at Rio Vista flow standards may create both operational challenges and ESA conflicts. Interior therefore supports implementation of the Sacramento River at Rio Vista flow standards as part of the Delta's WQCP with the following recommendation; that such implementation of the Rio Vista flow standard would be sufficiently flexible to allow real-time changes to address competing needs between upstream and downstream fishery objectives. We propose that, when such conflicts arise, the Bureau of Reclamation, the Department of Water Resources, the Fish & Wildlife Service, NOAA Fisheries, and the Department of Fish and Game, which already have regularly scheduled meetings regarding water operations and fishery management, address these competing needs and develop specific operational recommendations in response to the real-time situation.

In order to implement flexibility, the five agencies would need to coordinate and consult on a course of action. Shortly thereafter, the Project agencies, with full consensus from the fishery agencies, would submit their plan to the SWRCB, begin implementation, and provide an annual report to the SWRCB, explaining the rational basis for their decisions and the outcome of implementation of any flexibility in that year. Although the goal of the five agencies is to achieve consensus on decisions, the agencies retain their authorized roles and responsibilities.

A crucial aspect of this proposal is timeliness. The five agencies need to respond to rapidly changing biological and hydrological conditions as quickly as possible. Now, ten years after the WQCP was adopted, these agencies enjoy much greater access to real-time monitoring data from the Delta and upstream rivers. As either biological or hydrological data show changes, the agencies need to be able to adapt the Rio Vista flow standards to the competing needs of fishery resources.

Providing such flexibility to the implementation of the Sacramento River at Rio Vista flow standards would ensure the most effective protection of the migrating adult Chinook salmon and adult steelhead, as well as emigrating juvenile winter-run, spring-run, and late-fall-run Chinook salmon. It also allows for resolution of any conflicts between the fish needs of the lower Sacramento River and upstream habitat, which arises on occasion in particularly dry and critical years. The proposed flexibility to implement the Rio Vista flow standard is consistent with the adaptive management process currently described in the project Biological Opinions and will facilitate quick response to resource issues in a collaborative manner.

Potential Percent of Time
Rio Vista Std. Control
From Ocap Analysis

