DIVERSION EFFECTS ON FISHERIES GLOSSARY OF TERMS

AFRP Anadromous Fish Restoration Program, part of the Central Valley Project Improvement Act. The AFRP identified instream and Delta flows needed for recovery of anadromous fish.

Anadromous Fish Fish that spend a part of their life cycle in the sea and return to freshwater streams to spawn.

B(2) Water Statutory mandate to manage the water dedicated to fish and wildlife purposes pursuant to Section 3406(b)(2) of the Central Valley Project Improvement Act.

Banks Pumping Plant The State Water Project (SWP) export pumping plant in the south Delta. The plant is located downstream of Clifton Court Forebay.

Baseline This is CALFED's proposal for a base from which different scenarios of flexible operations can be measured. It is a set of operating criteria including the Accord, the upstream and in-Delta actions specified by AFRP and implemented by CVPIA.

Central Valley Project (CVP) Federally operated water management and conveyance system that provides water to agricultural, urban, and industrial users in California.

Central Valley Project Improvement Act (CVPIA) This federal legislation, signed into law on October 30, 1992, mandates major changes in the management of the federal Central Valley Project. The CVPIA puts fish and wildlife on an equal footing with agricultural, municipal, industrial, and hydropower users.

Clifton Court Forebay The in-Delta storage used to regulate flows to the Banks Pumping Plant.

Delta Cross Channel Existing gated structure and channel connecting the Sacramento River at Walnut Grove to the North Fork Mokelumne River. The facility was constructed as part of the CVP to control movement of Sacramento River water into the central Delta and to the south Delta export pumps. Operating criteria currently requires the gates to be closed for specific periods to keep downstream migrating fish in the Sacramento River and to prevent flooding of the central Delta.

Delta Inflow The combined water flow entering the Delta at a given time from the Sacramento River, San Joaquin River, and other tributaries.

Delta Outflow The net amount of water (not including tidal flows) at a given time flowing out of the Delta towards the San Francisco Bay. The Delta outflow equals Delta inflow minus the

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water used within the Delta and the exports from the Delta.

Direct Mortality The direct loss of fish associated with facilities (forebay, fish screens, and salvage facilities) for the south Delta export pumps. This direct mortality is a portion of the total fish mortality resulting from operation of the export pumps (see indirect morality).

Ecosystem Manager (Trustee) An entity responsible for environmental improvements in the Bay-Delta system with the financial means, legal rights, authorities, and discretion needed to carry out the Ecosystem Restoration Program (ERP).

Export Water diversion from the Delta used for purposes outside the Delta.

Export-Inflow Ratio (E-I Ratio) This requirement presently limits Delta exports by the State and federal water projects to a percentage of Delta inflow. In July through January, 65% of inflow can be exported. During February through June, months most critical to fisheries, the allowable E-I ratio is reduced to 35% to help diminish reverse flows and the resulting entrainment of fish caused by south Delta export operations.

Fish Entrainment The incidental capture and loss of fish during water diversion.

Fish Salvage The process of screening fish at the south Delta export facilities and physically transporting them by truck to release in other parts of the Delta. This generally results in higher fish mortality than a more conventional fish screen where screened fish simply return to the river and continue downstream. Fish salvage is required at the export facilities since there is no flow continuing downstream to carry the fish away.

Flexible Operations Operation of the south Delta export pumps that would allow reducing export pumping at times critical to fish and increasing export pumping at other times. Flexible operations would allow higher or lower export rates and export-inflow ratios than prescribed by the *1995 Water Quality Control Plan*. Pumping could deviate from currently permitted rates seasonally and on a real-time basis in response to Delta flows and fish distributions.

Hood A location on the Sacramento River in the northern Delta above the major tidal influence. It has been identified as one potential location for a new diversion, if it is determined to be needed, from the Sacramento River. A new intake at this point could move more water into the central Delta or be the beginning for an isolated facility. Sacramento River water is much fresher at this location than at the export facilities and a diversion at this point may have substantially fewer impacts on some species of fish than the current diversions at the export pumps.

In-Delta Storage Water storage within the Delta by converting an existing island to a reservoir. The storage can help facilitate flexible operations of the export pumps by allowing export of stored water when critical fish species are present in the south Delta.

Indirect Mortality The indirect fish losses from operating the Delta Cross Channel and south Delta export pumps. For example, fish diverted from the Sacramento River into the central and south Delta experience higher mortality through increased stress, small agricultural water diversions, predation, reduced shallow water habitat for fry, higher water temperatures, and higher residence times. This indirect mortality is a portion of the total fish mortality resulting from operation of the export pumps (see direct morality).

Old River A natural channel in the southern Delta. The channel merges with many other channels in the south Delta, passes by the south Delta export facilities and connects with the San Joaquin River at its upstream end. Much of the water approaching the export facilities flows up Old River from the central Delta. Potential improvements to the channel include a fish barrier at its upstream end to keep migrating fish in the San Joaquin River and dredging north of Clifton Court Forebay to allow more efficient flow to the export facilities.

QWEST A broad indication of the net direction and quantity of flow in the San Joaquin River at Jersey Point. This is only an indicator since there is considerable tidal exchange at this point. A positive QWEST indicates the net flow is generally in the downstream direction towards the San Francisco Bay. A negative number indicates that the net flow is generally in the upstream direction to the east. Generally, a positive QWEST is desirable for Delta flow circulation, water quality, and fisheries.

Real-Time Monitoring and Operations Continuous observation in multiple locations of biological conditions on site in order to improve management to protect fish species and allow optimal operation of the water supply system. This is an essential feature to allow flexible operations of the export pumps.

State Water Project (SWP) State operated water management and conveyance system that provides water to agricultural, urban, and industrial users in California.

Tracy Pumping Plant The CVP export pumping plant in the south Delta.

X2 The location (measured in kilometers upstream from the Golden Gate Bridge) of 2,000 parts per million total dissolve solids. The length of time X2 must be positioned at set locations in the estuary in each month is determined by a formula that considers the previous month's inflow to the Delta and a "Level of Development" factor, denoted by a particular year. X2 is currently used as the primary indicator in managing Delta outflows. The X2 indicator is also used to reflect a variety of biological consequences related to the magnitude of fresh water flowing downstream through the estuary and the upstream flow of salt water in the lower portion of the estuary. The outflow that determines the location of X2 also affects both the downstream transport of some organisms and the upstream movement of others and affects the overall water operations of the CVP and SWP.