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This is my list of key assumptions that underlie most of the diversion effects evaluations and form the basis for the "old paradigm." Recent analyses cast considerable doubt on, and in some cases refute, each of these assumptions.

Indirect mortality is significant and is caused by water project operations in the Delta. "Water project operations" can be measured by QWEST (the calculated flow in the lower San Joaquin River), by the "zone of influence" (the unquantified zone around the pumps where net advective flows induced by export pumping dominates the movement of fish eggs, larvae, and juveniles), or by the export-inflow ratio.

The flow in the Sacramento and San Joaquin Rivers, at the time of outmigration for salmon smolts or of egg and larvae presence for other fish, is a significant determinant of survival.

There are statistically significant relationships between abundance of various estuarine species and the average location of the 2 ppt salinity line, measured as X2, the distance of that salinity line from the Golden Gate Bridge, in February through May. Even though X2 is known to be a surrogate for other, more fundamental factors (including flooded vegetation, gravitational currents, inflow of particulate organic carbon, shallow water habitat) that differ from species to species, the best way to control abundance is by controlling X2.

There is a direct, consistent, and strong relationship between the number of juvenile fish and the number of adults in subsequent years. If any other factors affect this relationship to a significant degree, these factors are

unpredictable and their importance from year to year cannot be used to better manage the system.

Direct mortality at the export pumps (consisting of pre-screen predation, screening mortality, trucking and handling mortality, and post-release predation) is, relative to other controllable sources of mortality, significant for salmon, striped bass, Delta smelt, steelhead, splittail, and other fish and must be minimized to ensure increases in adult production.

Water project effects on fish in the Delta are so important that the relative importance of other upstream or downstream effects need not be considered in decisions about controlling water project effects in the Delta.