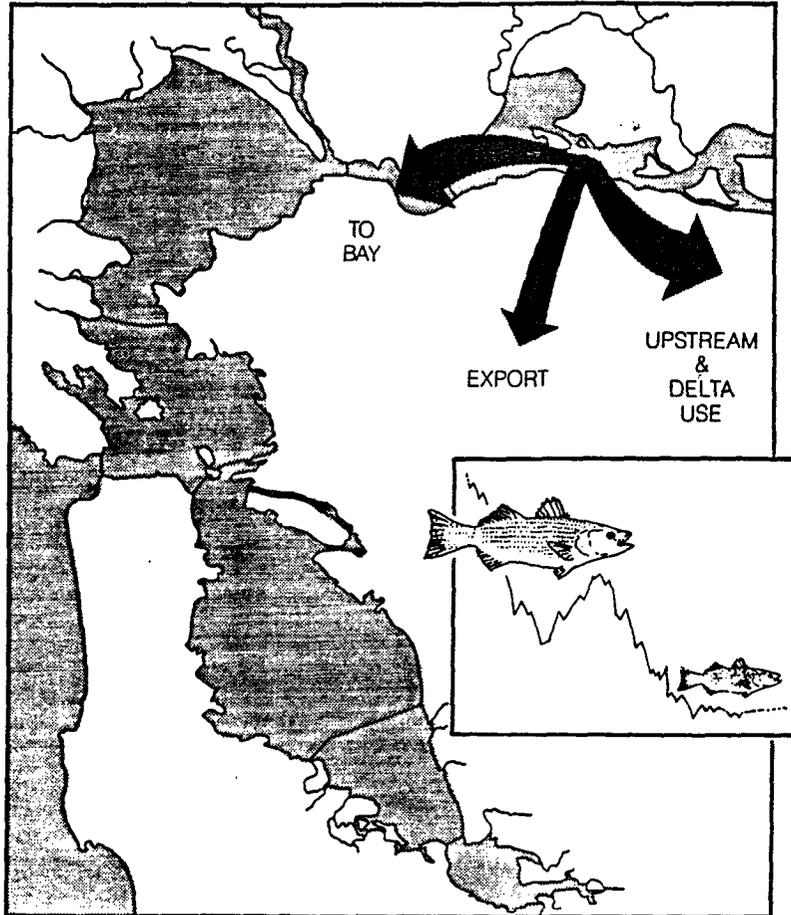


SUMMARY

THE ROLE OF WATER DIVERSIONS IN THE DECLINE OF FISHERIES OF THE DELTA— SAN FRANCISCO BAY & OTHER ESTUARIES



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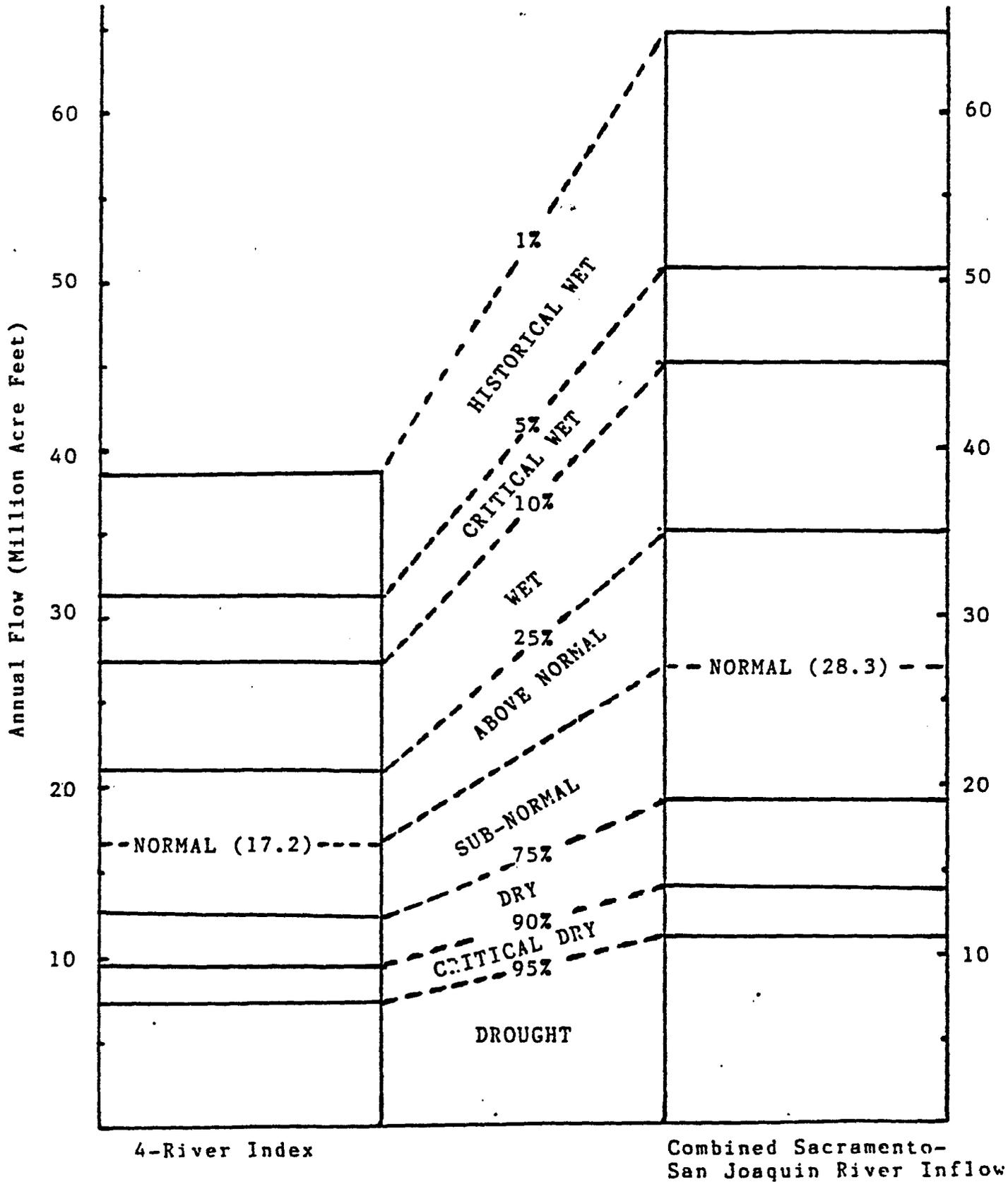


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8. Current decisions (including D-1485) regarding water distribution in California are based on a water year-type classification system (the Four-River Index) which excludes 25% of the Sacramento-San Joaquin river watershed. As a result, the normal (long-term mean) Four-River Index runoff (\bar{Q} = 17.2 MAF;

Fig. 3-1

Comparison of Combined Sacramento-San Joaquin-River Inflow and 4-River Index Water Year-Type Classification Systems.
 (% = probability of occurrence)



1921-1978) accounts for only 61% of the normal Sacramento-San Joaquin River inflow to the Delta originating from 100% of the basin area (\bar{Q} = 28.2 MAF; 1921-1978). Therefore, evaluation of wetness of the year, residual runoff and consequent planning for water diversions, based on the Four-River Index, overestimate the level of water availability in a manner incompatible with the relatively meager natural levels of runoff. It follows that in normal, and especially in sub-normal and dry years, the Four-River Index classification system influences decision-makers towards permitting higher (and potentially damaging) levels of diversions.

Recommendations: Runoff

We strongly recommend (as in our previous report, Rozengurt, Herz & Feld, 1987a) that the SWRCB discontinue the use of the Four River Index classification system and substitute it with a system which utilizes flow from the entire watershed for the determination of natural seasonal and annual wetness type, and subsequently, volumes of water available for diversion and correspondance of residual flows to natural flow statistics (i.e., water year-type). Only if total outflow is used as the basis for classification will it be possible to provide the flows needed to protect and maintain the fish and other resources of the Delta-San Francisco Bay system (Fig.3-1).

In our opinion, the recommendations contained in Decision 1485 (based on the Four River Index system) have resulted in spring flow levels that are unprecedented in the recorded history of the system (frequency of occurrence less than once per 100

years). The excessive spring water withdrawals, compounded by the late winter water diversions, have significantly reduced annual river and Delta discharges and contributed greatly to the deterioration of the resources of the system during the past decade.