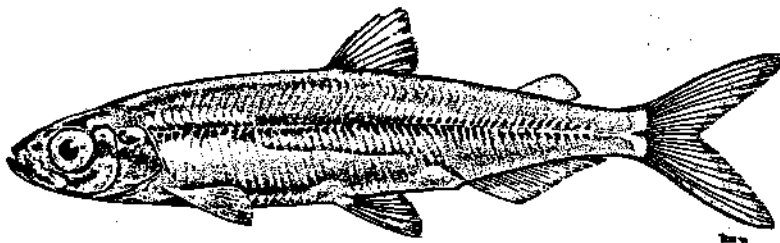


State of California
THE RESOURCES AGENCY
Department of Fish and Game
Bay-Delta and Special Water Projects Division

Written Testimony

Delta Smelt



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saltwater is repelled, more of the population occurs in Suisun and San Pablo bays and less occurs in the Delta (Figures 2 and 3). There is reason to believe that delta smelt benefit from being transported to Suisun Bay. Historically, when delta smelt were more abundant a large proportion of the population was found in Suisun Bay and the surrounding areas. In winter and spring, as the spawning period approaches, adult delta smelt disperse widely into freshwater, as far upstream in the Delta as Mossdale on the San Joaquin River and the mouth of the American River on the Sacramento River.

Delta smelt live principally in the upper portion of the water column. During a 1963-1964 survey of delta fish populations a 10 foot by 10 foot surface trawl captured 1960 delta smelt while a 15 foot by 5 foot otter trawl only captured 461 delta smelt. These results were obtained despite the otter trawl constituting 60 percent of the surveys effort of about 1800 tows.

Status of the delta smelt population.

Information from seven independent data sets has demonstrated a dramatic decline of the delta smelt population and low population levels since 1983 (Figure 4). A rough estimate in CDFG's 1990 Status Report to the Fish and Game Commission placed the delta smelt population at several hundred thousand fish in 1985 although netting efficiency studies in 1991 indicate that abundance probably was actually about twice that level. Irregardless, based on September-December midwater trawl survey data, the 1985 population represents an 80% drop in abundance since 1983 compared to the average from 1967 to 1982 and a 90% decline from the peak level observed in 1980. Subsequent to the CDFG's status report to the Fish and Game Commission, the 1989 fall index has been reevaluated and corrected from 364 to 366 (Figure 5). The 1990 fall index has also been reevaluated and corrected to a value of 360 from 427. The 1991 fall index value was 689 which represents an increase from the 1983-1990 lows.

Table 5. Estimated salvage of delta smelt and water exports at the State Water Project diversion in the southern Delta, during 1977-1978.

| | <u>Month</u> | <u>Delta Smelt Salvage</u> | <u>Exports (thou. acre ft)</u> |
|------|--------------|----------------------------|--------------------------------|
| 1977 | Jan | 6980 | 205 |
| | Feb | 2430 | 106 |
| | Mar | 1707 | 97 |
| | Apr | 2975 | 14 |
| | May | 3017 | 68 |
| | Jun | 3033 | 17 |
| | Jul | 43489 | 20 |
| | Aug | 6435 | 15 |
| | Sep | 17890 | 9 |
| | Oct | 2528 | 8 |
| | Nov | 350 | 51 |
| | Dec | 55101 | 224 |
| 1978 | Jan | 134089 | 365 |
| | Feb | 53960 | 343 |
| | Mar | 4217 | 108 |
| | Apr | 130 | 35 |
| | May | 3523 | 59 |
| | Jun | 36289 | 201 |
| | Jul | 1034 | 211 |
| | Aug | 2658 | 246 |
| | Sep | 244 | 211 |
| | Oct | 60 | 127 |
| | Nov | 473 | 131 |
| | Dec | 900 | 169 |

1/ EC was not measured prior to 1969 even though the survey started in 1959.