

These factors, and their application to our decision to remove from the list the Sacramento splittail as threatened, are as follows:

A. The present or threatened destruction, modification, or curtailment of its habitat or range. We have identified, as threats to the splittail, the present operation of Federal, State, and private water development projects entailing water storage, diversions and re-diversions, releases, flood control, and export and agricultural return flows, which destroyed splittail habitat (59 FR 682, 64 FR 5963, 66 FR 2828). Each is discussed briefly below as are the beneficial effects of CALFED and the CVPIA, which offset some of these threats.

Habitat Loss: The Bay Institute (1998) has estimated that intertidal wetlands in the Delta have been diked and leveed so extensively that only approximately 3,237 ha (8,000 ac) remain of the 161,875 ha (400,000 ac) that existed in 1850, and that 90 percent of the riparian forest and riparian wetlands of the Sacramento Valley have been cleared, filled, or otherwise eliminated. Diking, dredging, filling of wetlands, and reduction of freshwater flows through more than half of the rivers, distributary sloughs, and the estuary for irrigated agriculture and urban use have widely reduced fish habitat and resulted in extensive fish losses (Moyle *et al.*, 1995; Nichols *et al.*, 1986).

There has been loss and degradation of the near-shore habitat required by splittail. Riparian and natural bank habitats are features that historically provided natural function to the stream banks and flood plains for splittail by providing spawning substrate, organic material, food supply, and cover from predators. Vast stretches of the Sacramento and San Joaquin Rivers, their tributaries, and distributary sloughs in the Delta have been channelized and the habitat converted or destroyed.

Delta water diversions and exports currently total 1.1 hectare-meters (ha-m) (9 million acre-feet (MAF)) per year. These diversions and exports also harm the splittail. The Federal and State water projects presently export as much as approximately 740,000 ha-m (6 MAF) per year from the Delta when sufficient water is available. Agricultural diversions for lands within the Delta range from 7,400 to 160,000 ha-m (60,000 acre-feet to 1.3 MAF); approximately 123,000 ha-m (1.0 MAF) per year in the long term period, 136,000 ha-m (1.1 MAF) in critical and dry years (CALFED 2000b). The draft White Paper entitled *Factors Relating to Salvage of Splittail at South Delta*

Pumping Plants (Cannon 2001 in prep.) states that “* * * lower population levels occurring as a consequence of salvage-entrainment related mortality may be reducing population resilience (e.g., less dependence on a single age class) and jeopardizing the long-term viability and ecological role of splittail in the estuary.” If entrainment mortality increases further, it could be expected to have even greater adverse effects on the splittail. In addition, reservoir operations and ramping rates for flood control inadvertently drain shallow water spawning habitat along river corridors and exacerbate stranding of splittail.

Beneficial Actions Offsetting Adverse Affects

A number of beneficial actions offset the above described adverse affects. Below are some of the specific actions or programs describing the beneficial actions.

CALFED Habitat Restoration: The CALFED Bay-Delta Program (CALFED) exists as a multi-purpose (water supply, flood protection, and conservation) program with significant ecosystem restoration and enhancement elements, and is well into its implementation phase (CALFED 2000a, 2000b). The stated mission of CALFED is to develop a long-term comprehensive plan that will restore ecological health and improve water management for all beneficial uses of the Bay-Delta system (CALFED 2000a, 2000b). The plan specifically addresses ecosystem quality, water quality, water supply, and levee system integrity (CALFED 2000a, 2000b). CALFED encompasses eight separate program elements; each having disparate potential effects to the splittail (CALFED 2000a, 2000b).

CALFED is a cooperative effort of the U.S. Department of the Interior, the U.S. Department of Commerce, the Environmental Protection Agency, the California Environmental Protection Agency, and the California Resources Agency, as well as other State and Federal agencies, with the involved public formally participating originally through the Bay-Delta Advisory Council, and currently through the Bay-Delta Public Advisory Committee (CALFED 2000a, 2000b). CALFED is a long term effort with an initial, shorter term implementation strategy (CALFED 2000a, 2000b). The Record of Decision (ROD) for CALFED was signed in August, 2000.

CALFED has has received sufficient funding (approximately 80 percent of funding required from the State of California, from CVP and SWP water project users and local entities, and

from Federal funding), to make progress toward achieving its goals which include restoration and enhancement of splittail habitat (CALFED 2000a, 2000b). While CALFED is not meeting the expected schedules, the individual actions are occurring generally within the scope of their own schedules (CALFED 2000a, 2000b). With respect to splittail actions, CALFED has identified the plan to be implemented, as well as the funding level, funding sources, and other resources necessary to implement it (CALFED 2000a, 2000b). In addition, CALFED has identified the appropriate authorities as well as the legal, regulatory, and procedural requirements necessary to implement the conservation effort. Importantly, CALFED has completed the environmental reviews and consultations necessary to proceed with its proposed actions. CALFED describes the nature and extent of threats being addressed, and addresses the threats to the splittail through its tidal and riparian habitat restoration projects, fish screen projects, environmental water program, water quality program and numerous other programs (CALFED 2000a, 2000b). CALFED defines its conservation objectives in terms of recovery of targeted species, including the splittail, and has identified the steps necessary to implement the program (CALFED 2000a, 2000b). The goal of CALFED to recover the splittail will remain whether the splittail is listed or not (CALFED 2000a, 2000b). CALFED has identified and employed quantifiable, scientifically valid parameters to demonstrate achievement of objectives and the standards by which progress is to be measured (CALFED 2000a, 2000b). CALFED monitors and reports on progress towards implementation (based on compliance with the implementation schedule) and effectiveness (based on evaluation of quantifiable parameters) of the conservation effort (CALFED 2000a, 2000b). Adaptive management has been incorporated into CALFED (CALFED 2000a, 2000b).

Although the splittail reared in the Sacramento River and/or Yolo Bypass are likely to largely avoid the CVP and SWP pumps, in the absence of any consideration of the splittail in the CALFED process, the splittail's status could be adversely affected by program elements to increase water storage in the Central Valley upstream of the Delta; modify Delta hydrologic patterns to convey additional water south, and upgrade and maintain Delta levees. However, as noted previously CALFED has an explicit goal to balance the water