

3406(b)(3)), modification of CVP operations (sections 3406(b)(1) and 3406(b)(19)), removal of fish migration barriers (sections 3406(b)(10) and 3406(b)(17)), screening of water diversions (section 3406(b)(21)), and acquisition of land and associated water rights (section 3408(h)), among others. Funding sources for CVPIA mitigation and restoration actions include the CVPIA Restoration Fund; State funds provided to meet CVPIA cost share requirements; and additional Federal funds appropriated by Congress.

Two programs, the CVP Conservation Program, and the CVPIA Habitat Restoration Program, were created to proactively restore and improve the Central Valley environment that was or is being impacted by the operations of the CVP. These two programs have provided funding to a number of projects which collectively would double the acres of riparian forest on the Sacramento River (from approximately 8,093 ha (20,000 ac) to 16,188 ha (40,000 ac)) and to contribute to the recovery of threatened and endangered species (Carlton 2003 in prep.). Combined efforts of Federal, state, and nonprofit partnerships have reforested almost 1,619 ha (4000 ac) between Red Bluff and Colusa during the last 15 years (Carlton 2003 in prep.). Riparian forest restoration would, over time, also increase the amount of large woody debris habitat available to splittail.

Section 3406(b)(2) of the CVPIA dedicates 98,680 ha-m (800,000 ac-ft) of CVP yield annually to implement fish, wildlife, and habitat restoration, and to help federally listed species. A portion of the 98,680 ha-m (800,000 ac-ft) identified in the CVPIA may be used to meet the Department of the Interior's obligations under the Bay-Delta Accord (discussed below). The rest of the water can be used for instream flows, additional Delta outflow, and the other purposes of the CVPIA. Management of dedicated, supplemental, and reoperated CVP yield will benefit splittail when water releases are made at times and locations that coincide with splittail spawning and rearing, and in such a manner that the releases are adequate to flood vegetated areas adjacent to stream channels. The provisions of section 3406(b)(2) are to be implemented for five years and involve not only upstream actions but also actions in the Delta which may benefit splittail.

**Other Habitat Restoration Projects:** Ecosystem restoration efforts have been undertaken within the splittail's range. USACE began implementation of an ecosystem restoration project on Prospect Island in the northwestern

Delta in 2001 (Coastal America 2000). The project is likely to result in the restoration of approximately 243 ha (600 ac) of open water, 134 ha (330 ac) of tidal emergent marsh, and 95 ha (235 ac) of mud flat within Prospect Island's approximately 486 ha (1,200 ac) interior. These may represent habitat enhancements for splittail.

Restoration efforts have been undertaken at the Cosumnes River Reserve under management by the Bureau of Land Management (BLM), The Nature Conservancy, and a number of other agencies and private organizations (The Nature Conservancy 2002a). Restoration activities that benefit splittail include riparian enhancement and intentional breaching of levees to restore floodplain function. Restoration is ongoing and splittail are likely to benefit from any efforts, as the area has also been described as among the most important floodplain habitats still available to the species (Moyle *et al.* 2001).

CDWR has also completed an ecosystem restoration on Decker Island, located on the Sacramento River, adjoining Sherman Island near the confluence with the San Joaquin River (CDWR 1998). The project has restored approximately 4.45 ha (11 ac) of shallow water habitat that is likely to be utilized by the splittail. The California Department of Transportation has committed to restore 190 ha (470 ac) of tidal marshes within the range of splittail for the benefit of splittail as compensation for impacts resulting from the construction of the Benicia Martinez New Bridge (USFWS 2003a).

USACE and CDFG are currently in the final stages of planning the Napa River Salt Marsh Restoration Project (USFWS 2003b). Approximately 1,262 ha (3,120 ac) of diked salt ponds would be restored to tidal marshes usable by splittail.

The 44 ha (109 ac) Kimball Island Mitigation Bank reestablished riverine aquatic bed, riparian forest, shaded riverine aquatic, and tidal marsh habitat at the mouth of the Delta usable by splittail (Wildlands, Inc. 2002).

In early 2002, our Sacramento River National Wildlife Refuge Complex (SNWRC) began implementation of the Environmental Assessment for Proposed Restoration Activities on the Sacramento River National Wildlife Refuge. The restoration activities will result in the reestablishment or enhancement of approximately 960 ha (2,372 ac) of land on 11 units or subunits of the SNWRC. Restoration and enhancement will involve the removal of crops, orchards, and related infrastructure (pumping units, barns,

sheds, etc.) followed by replacement with native vegetation appropriate to each site (USFWS 2002a). A portion of these actions are expected to benefit splittail through the improvement of vegetative conditions on floodplains and the eventual creation of large woody debris (via riparian tree mortality and entrainment).

The Vic Fazio Yolo Bypass Wildlife Area (Wildlife Area), located within the Yolo Bypass, will increase in size from its current approximately 1,497 ha (3,700 ac) to approximately 5,261 ha (13,000 ac) (The Nature Conservancy 2002b). This increase was not analyzed in the February 1, 1999, final rule (64 FR 5963), or in the January 12, 2001, notice (66 FR 2828). Though the Wildlife Area does contain entrainment hazards, and is located along the slightly less infrequently inundated western edge of the Yolo Bypass, it will incorporate opportunities to restore the lower reaches of Putah Creek. The added area may allow restorations to proceed that benefit splittail to a greater degree than possible with the current shorebird and waterfowl-intensive management regime.

Other State efforts may contain actions beneficial to the splittail which were not analyzed in the February 1, 1999, final rule (64 FR 5963), or in the January 12, 2001, notice (66 FR 2828). Assembly Bill (AB) 360, the State Delta Flood Protection Act, has a primary purpose of strengthening Delta levees with various "hard" measures, including riprap. Habitat restoration components of AB 360, more properly considered mitigation for concurrent State projects' impacts to aquatic and terrestrial ecosystems in the Delta do require improvement rather than a strict mitigation approach which results in an increased habitat benefit and a net increase in habitat. The State Senate Bill (SB) 1086-funded Sacramento River Conservation Area is an interagency group chartered to promote and guide protection and enhancement of riparian resources and fluvial function the reach of the lower Sacramento River between Red Bluff and Colusa. The Nature Conservancy, working with the Sacramento River Conservation Area and local stakeholders, has acquired appreciable amounts of land for restoration. This and other future Sacramento River Conservation Area actions may be beneficial to splittail.

**Conclusion:** The loss of spawning and rearing habitat remains a potential threat to the splittail. However, the implementation and magnitude of the CALFED, and CVPIA programs, and other habitat restoration activities, which focus on the restoration of