

4.3 Special Status Species.

4.3.1 Baseline Conditions. A list of Federally listed threatened, endangered, and proposed species was requested by the Corps for the Liberty Island and Rio Vista USGS quadrangle maps in November 1996 and updated in July 1997. In letter Reference # 1-1-97-SP-282 (Attachment C), the FWS identified 12 listed species, 2 critical habitats, and 2 proposed species which may occur in the project area (Table 3). The Department of Fish and Game's Natural Diversity Database (NDDDB) (1997) was searched for State species of special concern for the two USGS quadrangle maps. Figure 7 shows the locations of the NDDDB survey results. A biological data report prepared by the Corps notes that habitat for valley elderberry longhorn beetle, giant garter snake, and the State-listed Swainson's hawk exists on Prospect Island.

Table 3. FWS Species List.

Listed Species	Listed Species (cont.)	Proposed Species
BIRDS	FISH CRITICAL HABITAT	FISH
American peregrine falcon (Endangered)	winter-run chinook salmon (Threatened)	Central Valley steelhead (Proposed Endangered)
Aleutian Canada goose (Threatened)	delta smelt (Threatened)	Sacramento splittail (Proposed Threatened)
bald eagle (Threatened)	INVERTEBRATES	
REPTILES	Conservancy fairy shrimp (Endangered)	
giant garter snake (Threatened)	vernal pool tadpole shrimp (Endangered)	
AMPHIBIANS	vernal pool fairy shrimp (Threatened)	
California red-legged frog (Threatened)	valley elderberry longhorn beetle (Threatened)	
FISH	Delta green ground beetle (Threatened)	
winter-run chinook salmon (Endangered)		
delta smelt (Threatened)		

Other Federally listed animal species on the FWS list that are not likely to occur in the project include due to lack of habitat are three vernal pool crustacean species, the Delta green ground beetle, California red-legged frog, and three birds (peregrine falcon, Aleutian Canada goose, and bald eagle). Of the special status plants, the listed species do not appear to be present. However, the two candidate species, Mason's lilaepsis (*Lilaeopsis masonii*) and Delta tule-pea (*Lathyrus jepsonii*), have been reported along islands just south of Prospect Island (Figure 7) (FWS, 1997).

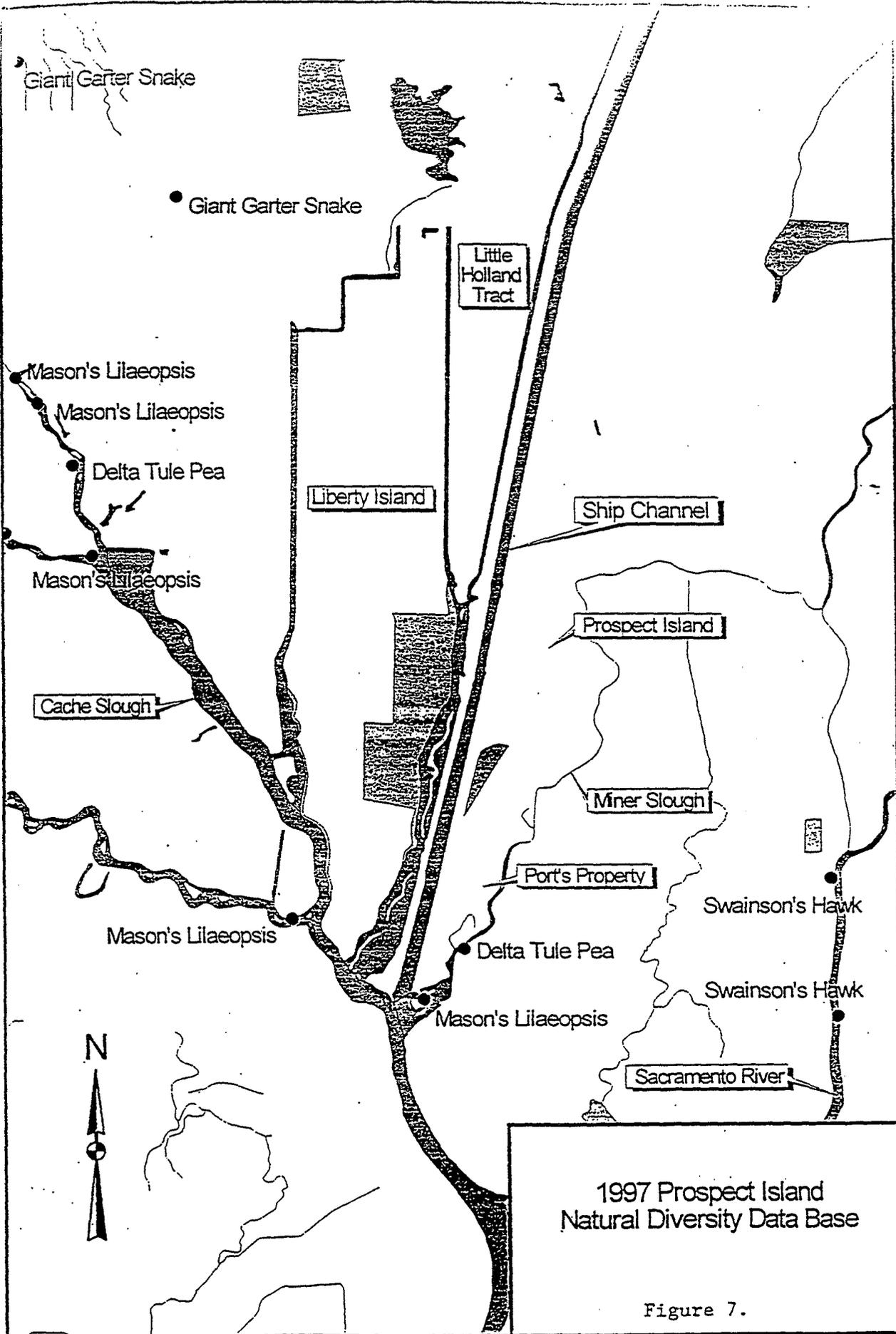


Figure 7.

Critical habitat for Delta smelt encompasses the water bodies within the Delta, including the ship channel and Miner Slough. According to FWS, the term "Delta" refers to all tidal waters contained within the legal definition of the San Francisco Bay - Sacramento-San Joaquin River Delta, as delineated by section 12220 of the State Water Code of 1969. Generally, the Delta is contained within a triangular area that extends south from the city of Sacramento to the confluence of the Stanislaus and San Joaquin Rivers on the southwest corner and Chipps Island in Suisun Bay on the southwest corner. Since Cache Slough, a mitigation area for Delta smelt, is located near Prospect Island, it is likely that Delta smelt inhabit the area.

4.3.2 Environmental Effects. The effects of the restoration project on special status species were analyzed and coordinated with the FWS and the National Marine Fisheries Service (NMFS) for this 1997 EA/IS. The effects of the restoration project are discussed below.

No Action. Under this alternative, the habitat for endangered species would remain in its current condition.

Alternative Plan. It is the Corps biological assessment that there are no Federally listed birds, amphibians, fisheries, or critical habitats in the project area that are likely to be adversely affected by the proposed construction project.

Since the project would be constructed under dry conditions, Federally listed fisheries would not be affected during project construction. However, after project construction, after the levees are breached, an interagency team would monitor the site for fisheries and other elements such as wildlife and water quality (Attachment D). Fisheries monitoring would require a special status species take permit from the FWS in the event that special status species are caught during the monitoring process. The Corps, in accordance of Section 7 of the Endangered Species Act is coordinating with the FWS and NMFS to acquire this permit after the interagency monitoring plans are finalized.

Critical habitat for Delta smelt. No adverse effects of the restoration plan on critical habitat for Delta smelt can be identified at this time. The species would probably benefit from the project because the site is near the Cache Slough mitigation area, a spawning area for Delta smelt. Fisheries monitoring in the constructed project site may result in potential take of smelt; however, given the species preference for shallow waters with good tidal action, the alternative would benefit the Delta smelt by providing habitat for spawning and rearing.

It is possible, but unlikely, that a large proportion of the Delta smelt population from throughout the Delta would migrate to Prospect Island to spawn as a consequence of the restoration. Surveys during the last few years have shown that in some years Delta smelt congregate in specific areas in the Delta. In other years, small populations of the fish are found dispersed throughout the Delta. The FWS expects that the local adult Delta smelt population found in Cache Slough would most likely compose the population that would use Prospect Island and be attracted to a more favorable shallow water environment conducive to early life history stages (FWS, 1997).

The North Bay Aqueduct, a water diversion plant located on Barker Slough, is about 8 miles from the confluence of Cache, Lindsey, and Miner Sloughs with the ship channel. The extent to which the plant would entrain Delta smelt has been interagency concern. The FWS wrote a biological opinion (1997) on the effects of long-term operations of Federal and State water projects on the Delta smelt. In summary, increased larval Delta smelt production associated with habitat restoration at Prospect Island will not cause additional pumping restrictions when risk to the overall population of Delta smelt is low. Wider distribution and higher numbers of rearing juveniles of Delta smelt have been shown to lower risks to this species. If these conditions exist, no additional pumping restrictions would occur due to increased larval production at the restoration site.

Delta smelt. No adverse effects of the restoration plan on the Delta smelt can be identified at this time. Habitat for Delta smelt would be created with shallow water (3 to 8 feet deep) along the edges of rivers, channels, and sloughs. The shoal regions would be created with submerged substrate such as vegetation, rocks, and roots. Dead end sloughs would be created on the northern section of the site.

Central Valley steelhead. No adverse effects of the restoration plan on the steelhead can be identified at this time. Low-elevation riparian areas created by the restoration plan could benefit this species by increasing spawning habitat. Monitoring in the project area may result in potential take of this species; however, steelhead would benefit from the general increase in productive shallow-water rearing habitat (FWS, 1997).

Sacramento splittail. No adverse effects of the restoration plan on the Sacramento splittail can be identified at this time. The Sacramento splittail habitat would include riparian areas, dead end sloughs, and newly flooded vegetation. Low-elevation riparian areas created by the restoration plan could benefit this species by increasing splittail spawning habitat. Monitoring in the project area may result in potential take of splittail; however, this species would benefit from the general increase in productive shallow-water rearing habitat. NMFS concurs with this assessment of effects on splittail (FWS, 1997).

Critical habitat for winter-run chinook salmon. The species would probably benefit from the project due to an increase in the overall area of productive shallow water habitat in the Delta. Monitoring in the project site may result in potential take of salmon; however, the extent to which salmon would use the site for rearing would likely be limited by the indirect connection to the Sacramento River through Miner Slough and the Yolo Bypass.

During wet years, there may be sufficient flows to carry young salmon into the project site. Salmon juveniles do not necessarily require strong tidal action to stimulate outmigration. Outmigration occurs naturally in association with the physiological changes during smolting. Therefore, muted tidal action for part of the area, rather than maximum tidal action, may be of benefit in that it might retain the salmon in an area of relatively high productivity and provide habitat for other fish species which depend on deeper, less tidally influenced areas (FWS, 1997).

Winter-run chinook salmon. No net adverse effect on the listed winter-run chinook salmon is anticipated at this time. Salmon habitat would include a migratory resting corridor with deep pools for juvenile salmon to mature in while migrating downstream from Miner

Slough. SRA vegetation would provide cooling, cover, and terrestrial insects. This vegetation type would also improve the nursery value of the Delta and could improve survival and natural production upstream. The largest benefit to anadromous fish would be the contribution of detritus and food to juvenile fish. The open water would provide crustaceans for juvenile salmon (FWS, 1997).

Valley elderberry longhorn beetle. The valley elderberry longhorn beetle, or its habitat, is restricted to the thin band of riparian habitat bordering the northern portion of the ship channel. Because construction is not planned for this area, the proposed plan would likely have no adverse effect on this species. The establishment of riparian vegetation may actually benefit this species if the host elderberry plant continues to grow at this site (FWS, 1997).

Giant garter snake. Due to the cultivation practices on Prospect Island, very little suitable habitat for the giant garter snake currently exists in the project site (Deweis, 1997). The canals and drainage ditches on the island are not suitable habitat for this species because the island has not been farmed for water-dependent crops like rice, but for drier crops such as wheat, corn, and safflower. However, restoration and management of permanent and seasonal wetlands may provide additional habitat for the snake.

Swainson's hawk. The proposed action would replace a minimal percentage of the Swainson's hawk foraging lands. Observations of this State-listed species are recorded along the Sacramento River (DFG, 1997). However, most of the land around Prospect Island is intensively farmed, and the types of crops grown make these lands valuable hawk-foraging habitat. As a result, adequate foraging habitat would remain within the vicinity of the project. Furthermore, the establishment of riparian areas in an undisturbed area may provide high quality nesting sites in the future.

Mitigation. Habitat restoration is expected to assist the recovery of listed fisheries and provide potential habitat for mammals, reptiles, and waterfowl. In accordance with section 7(c), coordination with the FWS and the NMFS has been initiated to determine whether listed species are likely to be adversely affected by this project. The Corps is submitting biological assessments to the FWS and NMFS and will be requesting concurrence from these agencies with the assessment's finding of no adverse effects from the proposed action to listed species.

The Department of Water Resources (DWR) is coordinating with DFG under the State Endangered Species Act for State-listed species.

4.4 Fisheries

4.4.1 Baseline Conditions. Before 1996 when the site was cultivated, the land was dry, and there was no surface water to provide habitat for fisheries. Water from irrigation drained in the ditches towards the southeast corner of the site, where there was a larger, open-water canal and a 60-horsepower drain pump that emptied into Miner Slough. Patches of riparian and SRA vegetation growing along the ship channel side of Prospect Island levees provide minor amounts of habitat. Overhanging riparian vegetation and