5.4 EXISTING CONDITIONS

5.4 EXISTING CONDITIONS

Introduction

The treatment of the present condition of the biological resources along lower Cache Creek included here and shown in Figure 5.4-1 is based primarily upon existing literature and aerial photographs. Locations of special-status species occurrences were obtained from the NDDB. Riparian vegetation types were initially mapped from 1989 black and white orthophotos according to the definitions established for a county-wide wetland survey.[1] Changes in polygon boundaries that occurred between 1989 and 1994 were determined from color aerial photographs taken in 1994, and the 1989 mapping was corrected accordingly. Digital mapping and acreage determinations were carried out by the Yolo County Community Development Agency.

Field study and critical re-examination of aerial photographs revealed that some of the distinctions between mature riparian forest types could not be consistently mapped. Most likely, although many typical examples of these types are clearly different, much of the area of tall riparian forests existing in the study area appears to represent a continuum of Fremont's cottonwood, mixed species riparian forest, and riparian valley oak forest. The latter intergrades with mixed valley oak and blue oak (the non-riparian oak forests mentioned in Section 5.3).

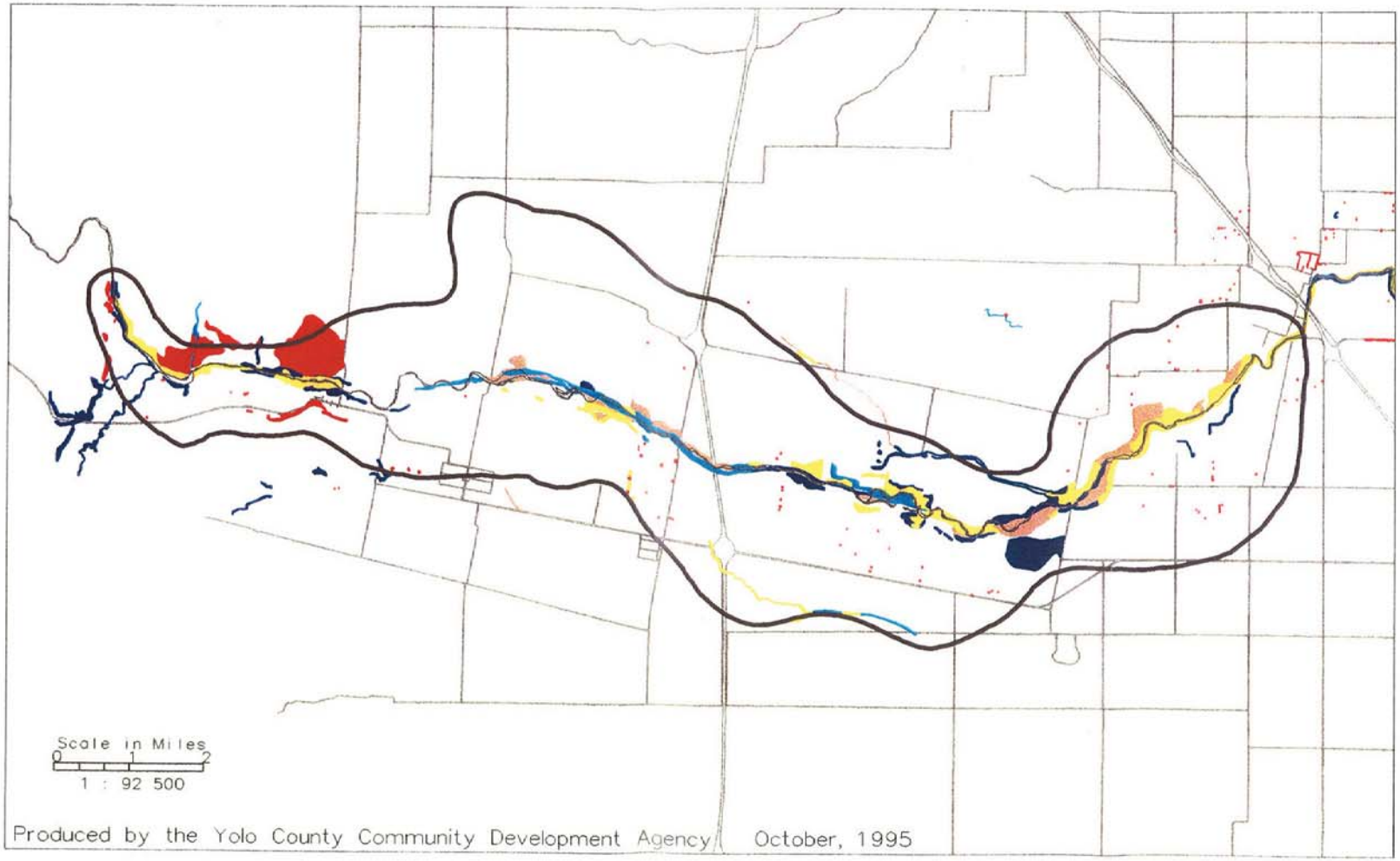
Although the two weedy species of concern, tamarisk and giant reed, are present at least in scattered sites over the entire length of the study reach, it was deemed useful to map localities or segments of the creek where they appeared to be particularly abundant. This mapping was accomplished from aerial photography as well. Field visits and oblique aerial photographs taken by the Fish and Wildlife Service during the tamarisk flowering season provided valuable confirmation of the mapping done from the 1994 late-season photography.

The oak forest associated with the golf course, two patches of wetland vegetation just north of the creek but not directly associated with it (in Subreach 8), and the vegetation associated with the Capay Dam impoundment are not included in Table 5.4-1.

Figure 5.4-1

Riparian Habitat Types

Cache Creek Study Area



Gravel Wash

Willow Scrub

Cache Creek

Riparian Forest

Oak Woodland

Mineral Resource Zone

Herbaceous

County Roads

TABLE 5.4-1

RIPARIAN VEGETATION TYPES THAT OCCUR ALONG LOWER CACHE CREEK

Vegetation Type	Acreage
Valley oak forest	76
Cottonwood forest	39
Mixed riparian forest	85
Willow scrub	821
Nonwoody riparian vegetation	364
Freshwater marsh	7
Seasonal wetland	84
Ruderal (weedy) wetland	20
Gravel wash (unvegetated gravel bars)	543
Artificial wetlands	1,221
TOTAL	3,260

Several generalizations about the overall character of the riparian vegetation presently existing in the study area can be drawn from this table:

1. The area of riparian habitat whose present character results from aggregate mining, a total of 1764 acres, far exceeds all other types combined. Some of this habitat, located in pits or other mined areas where mining disturbance has not occurred for some years, provides substantial habitat values of one kind or another, but little or none of it is mature riparian forest of the type that predominated in the past.

2. Approximately half of the remaining habitat is one type or another of herbaceous vegetation, a much higher proportion than would likely have been the case in the pre-settlement riparian system.

3. Only 200 acres of taller riparian forest exists, compared with 821 acres of willow scrub, which is an early successional stage of low-floodplain and sandbar woody riparian vegetation. In the context of a major low-gradient creek in the central Great Valley, this is indicative of a riparian system experiencing an extremely high level of disturbance, and/or one where upper flood plain vegetation is largely absent. Out of the total area of creek-associated land coverage, only six percent is mature riparian forest.

As described in Chapter 3.4, early surveying records indicate that nearly all of the width of the riparian system was vegetated by woody riparian plant communities, with only a narrow active channel (or gravel wash, in strongly losing reaches). Thus, the proportions of woody and non-woody communities that existed prior to 1900 - even after large-scale logging and livestock effects - was essentially the reverse of the present condition.

A further cause for concern is that a substantial portion of the 200 acres of mature forest has been hydrologically abandoned by degradation of the topographic level of the creek channel bed and has thereby lost the capability to regenerate with both the canopy and understory characteristic of riparian forest. These orphaned or relictual forest areas continue to provide vital habitat values for a variety of species, most notably birds (including Swainson's hawks) that nest in large trees adjacent to high quality foraging habitat in agricultural fields. However, the long-term future of these areas must be carefully evaluated as part of developing a successful plan for the management, reclamation, and/or restoration of habitat.

Habitat Conditions Within the Study Area

The following summary of habitat conditions is organized according to the definitions of subreaches presented in Chapter 3 and depicted in Figure 3.2-4 of this report.

Rio Jesus Maria (Subreach 2)

This subreach is the segment of leveed channel extends from the most easterly mining operations to the settling basin. Most of the subreach lies east of I-5, consequently outside the study area; the short portion lying with the study area is also leveed. Small amounts of woody riparian vegetation, scarcely constituting plant communities and providing only minimal habitat value, are present on the levees.

Hoppin (Subreach 3)

The Hoppin subreach is a heavily mined and strongly losing segment of the creek extending downstream from Stevens Bridge (Road 94B). Limited amounts of native willow scrub and more mature riparian forest are present, except in the vicinity of the bridge itself, where a secondary channel has developed more or less recently and led to the establishment of substantial dense willow scrub and herbaceous wetland vegetation. A few relictual riparian trees are found on the high northern bank in this vicinity, but the remainder of the orphaned forest that once existed there has been removed.

Tamarisk is rampant in the Hoppin subreach. In most areas, it has colonized substrate that native woody riparian plants have not, but in some places it is mixed with native woody species. Whether the competitive plant successional trend is toward tamarisk or toward native vegetation could not be determined. Giant reed is also established in scattered or dense occurrences along the northern bank and in the middle of the active channel in various locations. The latter occurrences certainly represent clumps uprooted and washed down from upstream.

Dunnigan Hills (Subreach 4)

The Dunnigan Hills subreach is the gaining segment of the stream extending upstream from the Stevens Bridge. This segment supports some high quality woody riparian vegetation, but a large proportion of the immediate creek vicinity supports only ruderal or herbaceous wetland vegetation, or at best patches of willow and mulefat scrub. It is not known whether this condition is a result of relatively recent mining activity or of woody vegetation washouts. Although this area affords higher habitat values than most of the study area, channel modification combined with revegetation efforts would provide much higher habitat value and geomorphic stability than is the present condition.

Within this subreach, high quality habitat exists in three primary locations:

- in patches on the north side of the creek near the golf course;
- throughout the creek/floodplain system within about 1,000 feet upstream and downstream of Moore Dam, a segment where in-channel mining does not occur and apparently has not occurred for some time; and
- in a privately owned nature reserve along Gorton Slough.

Gorton Slough flows generally parallel to Cache Creek, within one or two miles to the north, and debouches into the creek at Road 94B. The forest along Gorton Slough, although narrow over most of its length, is some of the highest quality riparian habitat present in Yolo County. It is composed mostly of closed-canopy valley oak forest, with patches of primarily herbaceous wetland vegetation. In addition to the fact that this area represents the extraordinary vision of one forward-looking landowner, it provides an interesting window into the pre-settlement condition of the Cache Creek system: Gorton Slough may represent or lie in the vicinity of one of the stable multiple channels that existed up through the early 20th century. At that time, the entire area intervening between the slough and the present Cache Creek would likely have supported a mosaic of oak and other riparian forests, seasonal wetlands, and perhaps small areas of native perennial grassland.

Giant reed occurrences within the Dunnigan Hills subreach are very limited in number and areal extent and would therefore likely be very susceptible to eradication. Tamarisk occurrences are also relatively few, but in some places where it occurs, specifically in the area surrounding a long-abandoned off-channel mining pit just northwest of Moore Dam, many large tamarisk trees constitute nearly all of the existing vegetation. This site is instructive in showing that, on some sites, the physical character and hydrologic regime is not conducive to establishment of native vegetation, but instead will support only tamarisk under present circumstances. In such areas, control of the tamarisk plants themselves is not useful without taking other actions that will alter the physical environment to one that will support establishment and vigorous growth of native riparian vegetation.

Guesisosi (Subreach 5)

Subreach 5 is a heavily mined, losing segment of the creek extending from I-5 down to the Dunnigan Hills subreach. The Guesisosi subreach supports very little woody riparian habitat, in the form of scattered shrubs or small trees. Much of the existing herbaceous vegetation is composed of a mixture of wetland and upland species, primarily non-native.

Madison (Subreach 6)

The Madison subreach extends from I-5 most of the distance upstream toward the Esparto bridge site. It is also a heavily mined and losing segment of the creek. A short segment of this subreach between I-5 and Road 89 supports widely scattered shrubby vegetation, and some undisturbed areas are subject to colonization by tamarisk and/or giant reed, but the hydrology of this subreach appears to be insufficient to support the extravagant growth of tamarisk or giant reed that is seen in some other areas. Large areas are nearly devoid of vegetation at present.

Hungry Hollow (Subreach 7)

This subreach extends the remaining distance upstream to the Capay Bridge. Its character is similar to that of subreaches 5 and 6.

Capay (Subreach 8)

This gaining reach lies between the Capay ridge and Capay Dam and supports a patchwork of riparian habitats of variable character and habitat values. Narrow strips of riparian thickets or forest line both banks of the active creek channel over most of the subreach, and some patches of mature forest are found. However, in strong contrast to the other gaining reach within the study area, the Capay subreach is heavily infested by both tamarisk and giant reed. Several large gravel bars and low floodplains upstream of the Capay bridge provide additional examples of a areas whose physical environment is much more suited to colonization by these weeds than by native species. Control or eradication of these two big weeds in the Capay subreach is likely to be a major and long-term task, and will require substantial concurrent or immediate post-removal native plantings and/or biotechnical bank reconstruction actions to stabilize bars and banks where the plants are removed.

Fisheries

Anadromous species continue to be virtually absent from the Cache Creek fisheries. This is due at least in part to the infrequency of high flows and the absence of a direct channel to the Sacramento River. Cache Creek now enters the Yolo bypass which connects to the Sacramento River through a series of sloughs. Steelhead, chinook salmon, American shad and striped bass have been observed infrequently at Capay dam during years of high streamflow[2]. However, there has been no evidence of successful reproduction by those species in Cache Creek.

The current fishery of Cache Creek is dominated by introduced resident species. Fish species such as smallmouth bass (*Micropterus dolomieui*), largemouth bass (*M. salmoides*), green sunfish (*Lepomis cyanellus*), bluegill (*L. macrochirus*), channel catfish (*Ictalurus punctatus*), brown bullhead (*I. nebulosus*), carp (*Cyprinus carpio*), and mosquitofish (*Gambusia affinis*)[3]. Native resident species which still occur in Cache Creek include Sacramento sucker, California roach, white catfish, Sacramento squawfish, hardhead and hitch although population estimates for these species are not currently available[4].

Smallmouth bass, largemouth bass, channel catfish and the native white catfish appear to be the main focus of a small angling fishery in the vicinity of Capay Dam. Carp are also fairly abundant in Cache Creek and considered as a game species. Spawning and rearing habitat for these species, especially smallmouth bass, catfish species, and carp is at least marginally suitable. Other fish species present which could be considered as game species include green sunfish and bluegill.

ENDNOTES

1. Jones & Stokes Associates, Inc. 1990. Conaway Ranch Special-Special Status Wildlife Species Inventory, Yolo County.

2. Shapovalov, L. *Report on Fisheries Resources in Connection with the Proposed Yolo-Solano Development of the United States Bureau of Reclamation* Bureau of Fish Conservation, California Department of Fish and Game. 1946.

3. Ibid.

4. Peter Moyle, University of California, Davis, California, Unpublished Data.