

## **Section 5. Post-Restoration Conditions and Assumptions**

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### **BACKGROUND**

A series of assumptions regarding conditions within the study area following habitat restoration were developed to guide the socioeconomic analyses presented in Section 6. Although no one can predict the future, and these assumptions are not meant to be predictions, it is necessary to make some best-guess estimates about future conditions in order to conduct the analysis. These assumptions relate to the extent of the study area, land conversion and ownership patterns, time frame for restoration implementation, and actions associated with infrastructure and flood control within the future riparian corridor. Several meetings with interested parties along the river were used to gauge the accuracy of the assumptions. These stakeholder meetings included SRCAF Board Members, County Supervisors, SRCAF Technical Advisory Committee members, organizations, agency representatives, and landowners. The assumptions that characterize the results of the riparian habitat restoration as a whole are presented below. Other assumptions used to drive specific economic analyses are presented in Section 6.

### **STUDY AREA BOUNDARIES**

The location and extent of the study area is based on physical conditions along the river and river processes that support riparian habitat. Historic flooding patterns were reviewed and existing flood control project levees were identified. The resulting study area encompasses 42,543 acres along the Sacramento River from Colusa to Red Bluff (approximately river miles 143 to 244). The study area includes all land within the federal flood control project levees north from Colusa to a point where the eastern levee ends near river mile 176, across the river from Glenn. From this point north, the study area boundary is established at the boundary of the 2.5-year return frequency flood elevation (Figure 4-2).

## LAND CONVERSION AND OWNERSHIP ASSUMPTIONS

The SRCAF management program goal includes preserving remaining riparian habitat and reestablishing a riparian ecosystem along portions of the Sacramento River. The focus area for habitat protection and restoration in this analysis is the river corridor between Red Bluff and Colusa. Similarly, this area has been identified for ecosystem restoration in CALFED's ecosystem restoration program (CALFED 1999).

The study area considered in this assessment encompasses 42,543 acres. Within this study area, the analysis assumes that 30,000 acres will support riparian vegetation, forming a riparian corridor at the end of the period analyzed in this report. The remainder of the land in the study area will continue in agricultural production or other uses, including urban and vacant. To reach the 30,000-acre goal for riparian habitat, some of the agricultural lands within the riparian corridor will be converted to riparian vegetation. The 30,000 acres will include 20,610 acres of existing public and private habitat and 4,496 acres of land already acquired for conversion to habitat. An additional 4,894 acres of privately owned agricultural land will be purchased for conversion to complete the riparian corridor. A total of 9,390 acres of land currently in agricultural production will be converted (see Table 5-1).

The acreage to be converted was assigned to the four counties based on the assumption that each county will contain the same percentage of the 30,000-acre habitat at the end of the conversion process as they currently contain of the total study area. An illustration of this assignment process, using Glenn County as an example is as follows. Approximately 29% of the study area is in Glenn County; therefore, its goal for total habitat was established at 29% of the 30,000-acre goal. This total county goal is 8,833 acres. To reach this goal, a total of 2,696 acres of conversion was calculated for Glenn County, as 6,137 acres of habitat already exist in the county portion of the study area. This conversion will consist of 1,856 acres of public/TNC land already purchased for conversion and 840 acres of agricultural land yet to be purchased (see Table 5-1).

This analysis assumes that all privately held land to be converted from agricultural land to habitat will be purchased in fee title. For this analysis, land outside the study area is assumed to remain in current land use, even in situations where a single land parcel is bisected by the study area boundary and the portion within the boundary is converted.

Following the conversion process, it is assumed that 29% (12,543 acres) of the land within the study area will remain in private ownership and continue in agricultural production or other uses. It is further assumed that the remaining 71% (30,000 acres) will be held in both public and private ownership as riparian habitat. Public land supporting infrastructure (e.g. roads, bridges, pumping facilities, boat launches) constitutes a small portion of the riparian corridor and is included in the 30,000 acres identified for public/private ownership. Of the privately held land transferred to public ownership, it is assumed that 40% will be transferred to a state entity (DFG) and 60% will be transferred to a federal entity (USFWS). The analysis assumes that no land within the corridor will be held in local public ownership even though small areas supporting local public infrastructure may exist.

It is assumed that Williamson Act contracts will be retained on all privately held agricultural land within the riparian corridor.

## **LAND CONVERSION TIME FRAME ASSUMPTIONS**

For purposes of this analysis, it has been assumed that the conversion of agricultural land to some form of riparian habitat within the riparian corridor will extend over the next 30 years (2001–2030), with most of the conversion (up to 90%) occurring in the first 20 years. The extended time frame will allow for continued agricultural use of orchard and field crop lands following purchase for conversion; orchards will be allowed to remain in production until the productive life of the trees has expired. This study assumes that the purchase of private agricultural lands for the purpose of conversion to habitat will be completed over a 10-year time frame (2001–2010).

## **ASSUMPTIONS REGARDING INFRASTRUCTURE MAINTENANCE AND FLOOD PROTECTION ACTIVITIES**

As lands along the river are returned to natural habitat conditions, it is assumed that human activities related to infrastructure maintenance, protection, and flooding will be reduced in areas where such reductions will not affect private property. The river will be allowed, in some locations, to reestablish a more natural pattern of meandering. The return frequency for flooding within the riparian corridor will remain at about 2.5 years.

It is assumed that infrastructure in place solely to provide access or services to the converted agricultural fields will be removed or abandoned in areas designated for habitat. These facilities will include public and private roads, power lines, water supply lines, and irrigation ditches. Infrastructure that is designed to serve a broader geographic area (i.e., areas within and outside of the riparian corridor) will be maintained. County or state highway bridge crossings will be protected and maintained, regional water or power lines will remain, irrigation project pumping facilities and diversion points will be protected, and public boat launch facilities will be maintained. The funding sources for the maintenance of these facilities will not change.

It is assumed that privately funded flood protection and bank protection facilities within the riparian corridor, consisting primarily of levees internal to individual parcels and rock along the river banks, will eventually cease to be maintained on publicly owned land. Maintenance of these structures will only occur where necessary to protect agricultural lands remaining in production and land supporting regional infrastructure following conversion. Federal and state flood control and bank protection activities, including maintenance of the Sacramento River flood project levees and Butte Basin overflow facilities, will continue. No efforts will be made to control stream bank erosion unless the erosion

threatens private agricultural land or infrastructure that is to remain in place beyond the time frame of this study.

## **SUMMARY OF ASSUMPTIONS**

In summary, at the end of the 30-year time frame, the study area along the Sacramento River will include a mosaic of agricultural fields and various types of riparian vegetation. The majority of the lands supporting riparian habitat will be held in public trust by state and federal government agencies that have a mandate to protect and restore habitat and water quality along the Sacramento River. The need to fund periodic infrastructure maintenance and repairs due to flooding along the river will be reduced from current conditions, and the river will be allowed to develop a more natural process of erosion and deposition within the riparian corridor. Flood protection and bank maintenance activities will continue where necessary to protect regional infrastructure, ongoing agricultural operations, lands outside of the riparian corridor, or public safety.