

Appendix A. Agriculture

The following sections provide details concerning the data sources and methodologies used in the assessment of changes in agricultural production within the study area.

DATA SOURCES

Land Use

Land use within the study area was based on the most recent land use maps published by DWR for Butte (1999), Colusa (1998), Glenn (1998), and Tehama (1999) Counties. This information was used as the basis for determining the acreage and location of land uses within the study area. Land use classifications included cropland, idle, semi agriculture, barren and wasteland, riparian vegetation, native vegetation, urban, commercial, industrial, residential, and vacant.

The DWR land use maps were also used to determine the acreage and location of specific crop types within the study area.

Land Ownership

Land ownership classes for lands within the study area were based on information provided by county assessors office's and the California Department of Water Resources (DWR 2001). Ownership classes developed for the agricultural analysis included federal, state, and local agencies/governments; TNC ownership/easements, and private ownership.

Crop Production and Value

County-level crop production rates and production values were based on information contained in the annual crop reports published by Butte (1991 through 2000), Colusa (1991 through 2000), Glenn (1991 through 2000), and Tehama (1991 through 2000) Agricultural Commissioner's Offices.

Annual crop production values were adjusted to 2000 dollars based on the Producers Price Index for farm products reported by the U.S. Bureau of Labor Statistics.

METHODS

The agricultural assessment focused on estimating the loss of cropland and associated loss in production and production value. The information from this analysis was used to help estimate the changes in regional economy associated with the restoration of riparian vegetation.

Step 1. Estimate Acreage and Type of Agricultural Lands Converted within Each County

Under this step, the acreage and type of agricultural land converted within each county as a result of restoration of riparian vegetation was estimated.

Step 1a. Determine Acreage of Agricultural Land Converted in Each County. To determine the acreage of agricultural land that would be converted within each county, a riparian habitat target acreage was developed for the entire study area (30,000 acres). Each county was then assigned an individual target for habitat. The county's percentage of the total habitat target was matched to the county's percentage of the entire study area (i.e. if a county contained 25% of the total study area acreage, its habitat target was set as 25% of the 30,000-acre overall habitat target). The acreage of lands that were already mapped as riparian habitat in each county was subtracted from the county's riparian habitat target acreage. This included lands classified by DWR as "riparian vegetation" and "native vegetation". The remainder was the amount of agricultural land that would be converted within each county.

Step 1b. Determine Acreage of Agricultural Land Under Federal, State, or TNC Ownership/Easement Within each County. Land ownership and DWR land use maps were used to determine the amount of land within the study area under public ownership and classified as agricultural land. It was assumed that restoring riparian habitat would occur only on lands classified by DWR as cropland. The acreage meeting the criteria for public land and cropland was subtracted from the target acreage for each county. The remainder was the amount of private agricultural land that would need to be converted within each county to meet the target acreage.

Step 1c. Determine Crop Types Converted

Step 1c-1. Public Lands. DWR land use maps were used to determine the crop types occurring on public lands that would be restored within the study area. Parcel information was used as an overlay to the DWR land use maps and the acreage of each crop type calculated.

Step 1c-2. Private Lands. The location of private lands converted within the study area was not known. To estimate the type of crops that would be converted, a percent allocation method was developed based on the acreage of crop types occurring within the study area. For example, if 50 percent of the cropland within a county was planted to walnuts, it was assumed that 50 percent of the private land to be converted in that county was planted to walnuts.

Step 2. Estimate Production Value and Rates

Under Step 2, the production values and rates for crops within the study area were estimated.

Step 2-1. Estimate Production Values. Production values (i.e. \$/ton, \$/pound, \$/acre, etc.) for the crop types occurring within the study area were calculated for a 10-year period (1991 to 2000). Production values were calculated individually for each county. Values were adjusted to 2000 dollars and then averaged for the 10-year period. Average production values were calculated and applied to the analysis to control for fluctuations in crop prices.

Step 2-2. Estimate Production Rates. Production rates (i.e. tons per acre, pounds per acre, etc.) for the crop types occurring within the study area were collected for a 10-year period (1991 to 2000). Production rates were averaged for the 10-year period for each crop. Average production rates were calculated for each county. Average production rates were calculated and applied to the analysis to control for annual fluctuations in production rates.

REFERENCES

References cited in this appendix are contained in the main references section of the report (Section 8).