



Background

The Farmland Mapping and Monitoring Program (FMMP) has documented agricultural land resources and land use conversions affecting these resources for more than two decades. During this time more than 1.2 million acres were removed from agricultural uses (Table 1). For every five acres exiting crop or grazing land, four converted to *Urban Land* and one converted to a miscellaneous class called *Other Land*. More than 28% of the Important Farmland survey area is classified as Other Land.

In FY 2001-02, FMMP received funding to better characterize Other Land conversions on a pilot area encompassing the San Joaquin Valley (Valley) counties of Fresno, Madera, Merced, and Stanislaus, 12% of the program survey area. The Rural Land mapping enhancement delineated four new categories: *Rural Residential and Commercial Lands, Vacant or Disturbed Lands, Nonagricultural Vegetation, and Confined Animal Agriculture facilities*—all of which had formerly been grouped into the Other Land category.

|                                  | Total Change | Annual Average |
|----------------------------------|--------------|----------------|
| (acres)                          |              |                |
| Irrigated Farmland               | -656,134     | -32,807        |
| Dryland Farming and Grazing Land | -572,373     | -28,619        |
| Urban and Built-up Land          | 967,682      | 48,384         |
| Other Land                       | 243,777      | 12,189         |
| Water (1)                        | 17,622       | 881            |

(1) Water increase primarily due to construction of Diamond Valley Reservoir, Lake Sonoma, Los Vaqueros Reservoir, Olivenhain Reservoir, and reclamation of former gravel pits into permanent water bodies in Alameda County.

Based on initial findings, requests from data users to expand the Rural Land Mapping enhancements followed. Information on the extent of rural residential development was particularly of interest as the presence of estate homes in agricultural areas increased. Users requested statewide implementation, or at minimum to include the four remaining Valley counties (Kern, Kings, San Joaquin, and Tulare). Efforts to secure funding to develop this information statewide have been unsuccessful to date.

Given the importance of the San Joaquin Valley to California agriculture, and agreement in the planning and agricultural community that this farmland is some of the most threatened in the country, FMMP proposed to complete the remaining Valley counties at the conclusion of the 2006 update, prior to commencing the 2008 map update. Because the work would be done with existing resources, it was acknowledged that release of 2008 data for all counties would be delayed.

2002-2006 Progress and Findings

In 2002, the distribution of rural land uses in the pilot counties was found to be related to landscape characteristics, administrative boundaries, and infrastructure. Proximity to processing facilities such as Hilmar Cheese, Hershey Chocolate, and Foster Farms contributed to a greater concentration of Confined Animal Agriculture in Merced and Stanislaus counties, for example. Nonagricultural vegetation was concentrated in high elevation forests, along streams, and in wildlife refuges. Vacant and Disturbed Land reflected many influences—historic mine tailings, riverside gravel operations, and undeveloped land within existing cities. Rural subdivisions were most common directly east of cities at the

irrigated/grazing land interface, in higher elevation forests, and scattered along rural roads in agricultural areas.

During the 2004 and 2006 map updates, more detailed imagery and site visits were used to improve the accuracy of the information in the pilot counties. The primary adjustment was correct for underreporting Rural Residential land in the wooded foothills of the Sierra Nevada. Minor adjustments among the four new categories also took place. In 2006, Mendocino County was added to the FMMP survey area; the rural land classes were also delineated in this 2.0 million acre addition.

In the pilot counties, Confined Animal Agriculture facilities and Rural Residential and Commercial areas increased at the highest rates during the 2002-2006 timeframe (Table 2). Growth rates of these categories exceeded that of urban development. Urban uses took up a significantly larger footprint in the four counties than rural residential areas (241,337 acres versus 94,488 acres, respectively, in 2006), yet expansion of low density residential uses has the potential for greater impact on agricultural sustainability due to the fragmented land use pattern and potential for conflicts over farming practices. Growth of Nonagricultural Vegetation was primarily due to wetland easements and expansion of wildlife areas along the San Joaquin Valley floor. More detail on the results of individual counties is available in field analyst reports and farmland conversion tables on FMMP's web site: <http://www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx>.

**Table 2**  
**2002-2006 Percent Change in Rural Land Categories**  
Pilot Counties

|  |       |
|--|-------|
| Urban and Built-up Land                | 9.0%  |
| Rural Residential and Commercial Land* | 11.7% |
| Confined Animal Agriculture            | 18.6% |
| Nonagricultural and Natural Vegetation | 8.0%  |
| Vacant or Disturbed Land               | 1.8%  |

\* Includes adjustments for delineation of Rural Residential areas in foothill areas.

#### A Fifth Category

In considering expansion of the project to the entire San Joaquin Valley, the mixed nature of the *Rural Residential and Rural Commercial* category appeared problematic. Rural Commercial land includes what are often referred to as 'semi-agricultural' uses such as farm and ranch headquarters, small packing sheds, compost facilities, and unpaved truck parking areas. To avoid confusion it was decided that the category would be split into *Rural Residential Land* and *Semi-agricultural and Rural Commercial Land*. This work was done to all eight Valley counties; 2006 statistics are shown in Table 3 (page 3).

All told, the Rural Land Mapping project now encompasses 16 million acres, or 33% of the FMMP survey area. Conversion information for the 2006-2008 period for all the counties will be released as it becomes available. The enhancements will be expanded to other counties as resources allow in coming years.

For more information about the Rural Land Mapping categories, please visit [http://www.conservation.ca.gov/dlrp/fmmp/Pages/rural\\_land\\_mapping.aspx](http://www.conservation.ca.gov/dlrp/fmmp/Pages/rural_land_mapping.aspx).

Table 3  
**2006 RURAL LAND USE SUMMARY**  
**CALIFORNIA DEPARTMENT OF CONSERVATION**

Division of Land Resource Protection

Farmland Mapping and Monitoring Program

|                           | Rural Residential Land | Semi-agricultural & Rural Commercial | Vacant or Disturbed Land | Confined Animal Agriculture | Nonagricultural Vegetation | Totals    |
|---------------------------|------------------------|--------------------------------------|--------------------------|-----------------------------|----------------------------|-----------|
| <b>SAN JOAQUIN VALLEY</b> |                        |                                      |                          |                             |                            |           |
| Fresno                    | 40,117                 | 6,587                                | 29,095                   | 12,190                      | 32,987                     | 120,976   |
| Kern                      | 34,549                 | 10,331                               | 243,077                  | 7,434                       | 2,031,732                  | 2,327,123 |
| Kings                     | 3,677                  | 2,622                                | 20,378                   | 8,852                       | 5,821                      | 41,350    |
| Madera                    | 26,120                 | 1,915                                | 10,820                   | 3,980                       | 20,976                     | 63,811    |
| Merced                    | 5,083                  | 3,469                                | 13,430                   | 14,157                      | 12,211                     | 48,350    |
| San Joaquin               | 12,047                 | 3,565                                | 9,551                    | 5,562                       | 22,819                     | 53,544    |
| Stanislaus                | 8,014                  | 2,413                                | 5,811                    | 11,846                      | 34,312                     | 62,396    |
| Tulare                    | 17,047                 | 5,094                                | 9,754                    | 22,176                      | 185,333                    | 239,404   |
| Totals                    | 146,654                | 35,996                               | 341,916                  | 86,197                      | 2,346,191                  | 2,956,954 |