

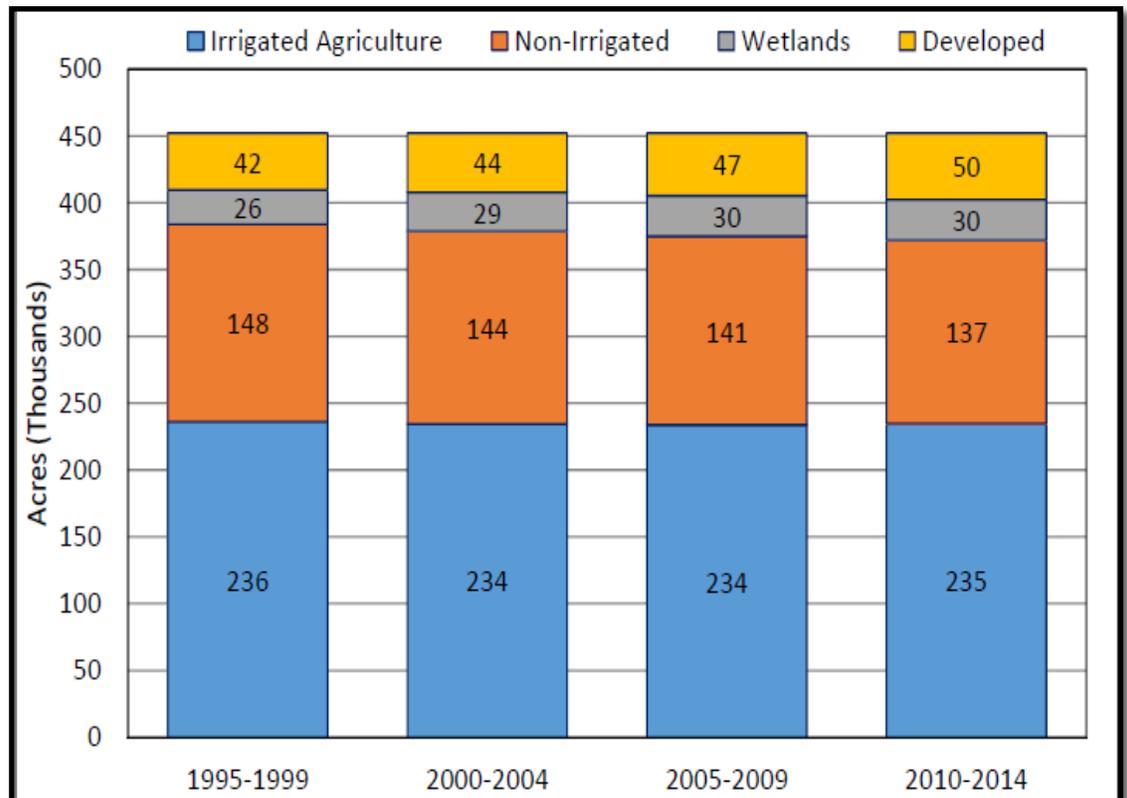
# 2016 WATER INVENTORY

## & ANALYSIS

### Highlights Part I: How has Land Use Changed since 2000?

Part I of a three part series highlighting key content from the newly released 2016 Water Inventory and Analysis Report.

One, perhaps surprising, conclusion of the report is that total irrigated agricultural acreage has been remarkably stable since 2000. This is for irrigated lands in the four groundwater subbasins or what is considered the valley portion of the County. Significant land use changes have occurred over the past 15 years but mostly related to orchards replacing grain, and other field and annual crops. In recent years, acreage has shifted from almonds and prunes to walnuts as well. Conversion of previously non-irrigated land to irrigated agriculture has been small, mainly on the margins of the valley or as infill in existing agricultural areas. Orchard crops tend to be in the northwestern and southern central portion of the valley floor in Butte County with rice and wetlands in between where clay soils dominate. Additionally, developed land (urban areas or rural residential) has increased from about 44,000 to 50,000 thousand acres since 2000.



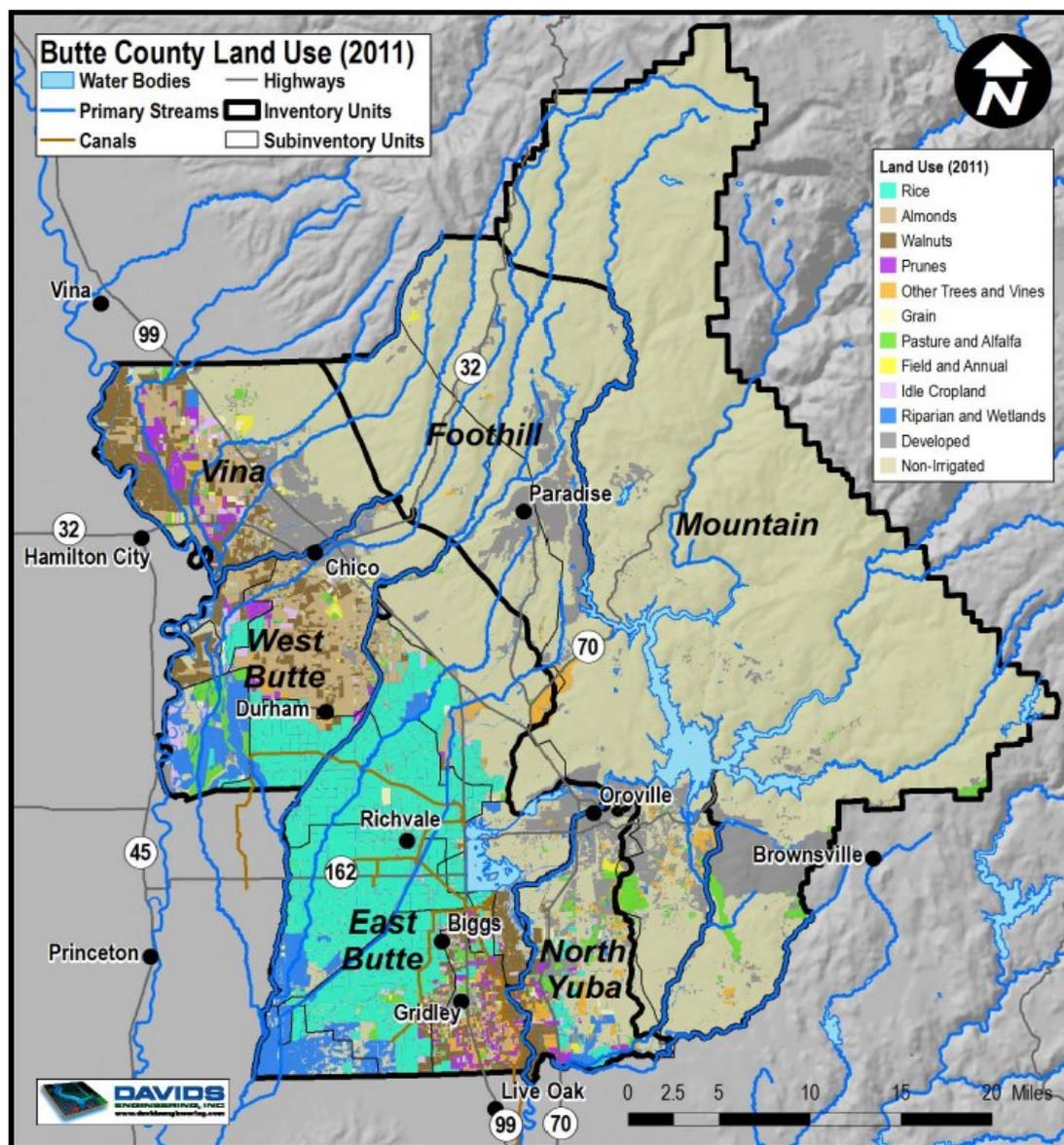
## And now some numbers...

Land use in the County over the past two decades has been evaluated based on land use surveys prepared by the Department of Water Resources (DWR) for 1994, 1999, 2004, and 2011. For the valley floor area, DWR surveys and annual Butte County agricultural commissioner crop reports are used to develop annual estimates of land use through 2014

Butte County covers approximately 1,677 square miles (1.073 million acres). The valley floor represents approximately 452,000 acres and includes approximately 234,000 acres of irrigated agriculture, 141,000 acres of non-irrigated lands, 47,000 acres of developed lands, and 30,000 acres of wetlands. The Foothill and Mountain areas are primarily non-irrigated rangeland and forest with some development, particularly in the Paradise area and other rural communities, and represent approximately 216,000 acres and 407,000 acres, respectively. Land use based on a detailed survey conducted by the DWR Northern Region Office (NRO) in 2011 is shown in the map.

The primary crops grown are rice and orchards, with rice representing an average of approximately 103,000 acres and orchards representing an average of approximately 93,000 acres. Almonds (38,000 acres), walnuts (34,000 acres), and prunes (11,000 acres) are the primary orchard crops, with decreases in almond and prune acreage over time offset by increases in walnuts and, to a lesser extent, other trees and vines (e.g., olives, peaches and nectarines, kiwis, pistachios, pears, and cherries). Other than orchards and rice, crops include pasture and alfalfa (13,000 acres), grain (4,000 acres), and miscellaneous field and annual crops (5,000 acres). Acreages for grain and other crops have decreased substantially over time, while pasture and alfalfa acreage have increased. On average, 16,500 acres were idle annually.

Breaking land use down by the four subbasin areas, provides more insight into changes and their relation to groundwater conditions in these areas. An overview is provided for each area.



## ***Vina Area Overview***

The border of Vina is defined in the south by Big Chico Creek. Vina covers approximately 88,000 acres and includes approximately 37,500 acres of irrigated agriculture, 36,600 acres non-irrigated lands, 13,500 acres of developed lands, and 400 acres of wetlands. Non-irrigated lands have decreased from approximately 39,000 acres in the late 1990's to approximately 35,000 acres in the early 2010's. This reduction is offset by increases in both irrigated agriculture (36,000 to 38,000 acres) and developed lands (12,000 to 15,000).

Primary crops grown are orchards, representing an average of 31,300 acres annually. Other crops have averaged 3,600 acres over the 15-year period from 2000 to 2014. Walnuts (13,900 acres), almonds (12,800 acres), and prunes (4,100 acres) are primary orchard crops, with other orchards making up 500 acres annually. Changes in cropping between 2000 and 2014 include a modest increase in walnuts offset partially by decreases in almonds and other, non-rice crops. Other crops include pasture and alfalfa (1,300 acres), grain (1,000 acres), and miscellaneous field and annual crops (1,300 acres).

## ***West Butte Overview***

West Butte is defined by Big Chico Creek in the north, Butte Creek along its eastern boundary and the Sacramento River in the West. Sub-inventory units include Angel Slough, Durham/Dayton, Llano Seco, M&T, and the portion of Western Canal west of Butte Creek. West Butte covers approximately 94,000 acres and includes approximately 56,000 acres of irrigated agriculture, 22,000 acres of non-irrigated lands, 9,000 acres of developed lands, and 7,000 acres of wetlands. Irrigated agriculture has decreased from approximately 62,000 acres in the late 1990's to approximately 56,000 acres in the early 2010's. Non-irrigated, developed, and wetlands land uses have each increased by about 2,000 acres over this period.

Primary crops grown are orchards and rice, with orchards representing an average of 33,000 acres and rice representing an average of 14,000 acres for the 15-year period from 2000 to 2014. Almonds (22,000 acres), walnuts (8,000 acres), and prunes (2,000 acres) are the primary orchard crops. Other than orchards and rice, crops include pasture and alfalfa (4,600 acres), grain (1,200 acres), and miscellaneous field and annual crops (2,100 acres). Changes in cropping between 2000 and 2014 include a decrease in grain and field and annual crops and an increase in walnuts.

## ***East Butte Overview***

East Butte is defined by Butte Creek in the west and the Feather River in the east. Sub-inventory units included are Biggs-West Gridley, Butte (portion of Butte Water District in Butte County), Butte Sink, Cherokee, Esquon, Pentz, Richvale, Thermalito, and the portion of Western Canal east of Butte Creek. East Butte covers approximately 219,000 acres and includes approximately 125,000 acres of irrigated agriculture, 58,000 acres of non-irrigated lands, 28,000 acres of wetlands, and 15,000 acres of developed lands. Irrigated agriculture has increased from approximately 122,000 acres in the late 1990's to approximately 125,000 acres in the early 2010's. Non-irrigated land decreased 4,000 acres, wetlands increased 2,000 acres, and developed area decreased 1,000 acres over this period.

Primary crops grown are rice and orchards, with rice representing an average of 86,000 acres and orchards representing an average of 22,000 acres for the 15-year period from 2000 to 2014. Walnuts (9,600 acres), prunes (4,100 acres), and almonds (3,400 acres) are the primary orchard crops. Other than orchards and rice, crops include pasture and alfalfa (3,600 acres), grain (1,300 acres), and miscellaneous field and annual crops (1,300 acres). Changes in cropping between 2000 and 2014 include a decrease in prunes, grain, and field and annual crops and an increase in walnuts.

## North Yuba Overview

North Yuba is defined on its western border with East Butte by the Feather River. North Yuba covers approximately 51,000 acres and includes approximately 24,000 acres of non-irrigated lands, 16,000 acres of irrigated agriculture, 10,000 acres of developed lands, and 2,000 acres of wetlands. Non-irrigated lands have decreased from approximately 27,000 acres in the late 1990's to approximately 23,000 acres in the early 2010's. This reduction is offset primarily by an increase in developed lands. Irrigated agricultural acreage has been relatively stable at 16,000 acres.

Primary crops grown are orchards, representing an average of 7,300 acres annually. Other, non-rice crops have averaged 4,400 acres, and rice has averaged 3,000 acres annually over the 15-year period from 2000 to 2014. Walnuts (2,700 acres) and prunes (1,500 acres) are primary orchard crops, with other orchards (e.g., olives, peaches, pears, and cherries) making up 3,100 acres annually. Other crops include pasture and alfalfa (3,200 acres), grain (900 acres), and miscellaneous field and annual crops (400 acres). Changes in cropping between 2000 and 2014 include a modest increase in walnuts offset by a decrease in prunes, as well as a slight decrease in other, non-rice crops.

## Check out the entire report

Complete results on Land Use and Cropping Patterns can be found in Section 3 of the report (pages 3-1 to 3-24). If you've made it through this entire article, you've read most of Section 3! What you've missed is lots of graphs that show annual changes in acreages.

The entire report is available on our website (<http://www.buttecounty.net/waterresourceconservation/WaterInventoryandAnalysis>) and although it's 200 pages are a bit overwhelming, it is filled with lots of figures, maps and tables that make it quite scannable. We encourage you to take a little time to just thumb through the document to get an idea of its layout and content and flip from figure to figure. Results are generally broken down and presented for the Valley portion of Butte County (corresponding to the four groundwater subbasin areas: Vina, East Butte, West Butte and North Yuba) and then individually for each of these areas. So if you're most interested in a certain area or subbasin, you can flip to that section and peruse the figures and tables associated with it. Also, the project wrap up newsletter provides an overview of the key findings of the report and is also available on the website (<http://www.buttecounty.net/wrcdocs/Reports/I&A/201603I&AWrapUp.pdf>).

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