

# AGRICULTURAL REGION AND STATISTICAL AREA: A DILEMMA IN CALIFORNIA GEOGRAPHY

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A problem that has always plagued economic geographers is the lack of conformity between the geographic region and the area for which statistics are reported. It is particularly critical in agricultural geography where the production surface covers extensive areas, unlike industry, and is therefore much more likely to be disturbed by the arbitrary boundaries of reporting areas. The disconformity becomes notably acute in areas such as California, where regional comparisons are vital for an adequate understanding of the agricultural life of the state. Great areal variations occur in the crop complexes, operational systems, and general intensity of California agriculture. Furthermore, important regional changes in these farming elements are also taking place.

Yet the usual "regional" boundaries used by statistical agencies are those of the county, a unit which creates special difficulties for geographic study in California and the rest of the West. County lines do particular violence to areas where there are great ranges of agricultural intensity by combining numerous gradations and also cutting across them. The minor civil division, a tool which permits a closer approach to geographic reality, also has its disadvantages. Although it is much smaller than the county, its boundaries also often lack discrimination because of their artificial nature. The high cost of procuring minor civil division statistics from the federal government is another hindrance. Furthermore, not all agricultural statistics are available on a minor civil division basis, some of the most critical deficiencies being in value of production.

## PRINCIPAL BOUNDARY DISCONFORMITIES

The various areas of major disconformities between agricultural region and statistical area become quickly apparent in an examination of the "State Economic Areas" of the U.S. Bureau of the Census (Fig 1-A) and the "Crop Reporting Districts" of the California Crop and Livestock Reporting Service, (Fig. 1-B). These two are the most important regional systems used for statistical purposes in California agriculture. They furnish a framework for reports which appear regularly and which deal with both acreage and value.

*Central Valley Margins.* By using county boundaries, both regional systems exclude important agricultural sections along the eastern margin of the Sacramento Valley, particularly in Nevada and Placer counties. Although the hilly nature of some of this terrain would make it more similar to the Sierra Nevada than the Sacramento Valley, the agriculture certainly has much more in common with the Central Valley than the small Alpine meadows of the Sierra or the valleys of the northeastern interior. Another

discrepancy of this order but on a smaller scale is the inclusion of the northern tip of the Sacramento Valley (Redding area) with the climatically different northeastern interior valleys. A more serious situation, however, is the inclusion by the Census Bureau of a sizable chunk of the Sacramento Valley (Solano County) in the Central Coast region.

Except for small marginal strips in the extreme northeastern and northwestern corners, the San Joaquin Valley is relatively free of divergencies between agricultural region and reporting area. One saving thing to the correlation problem in California and the West is the tendency of county lines to follow mountain divides or other topographic features that are hos-

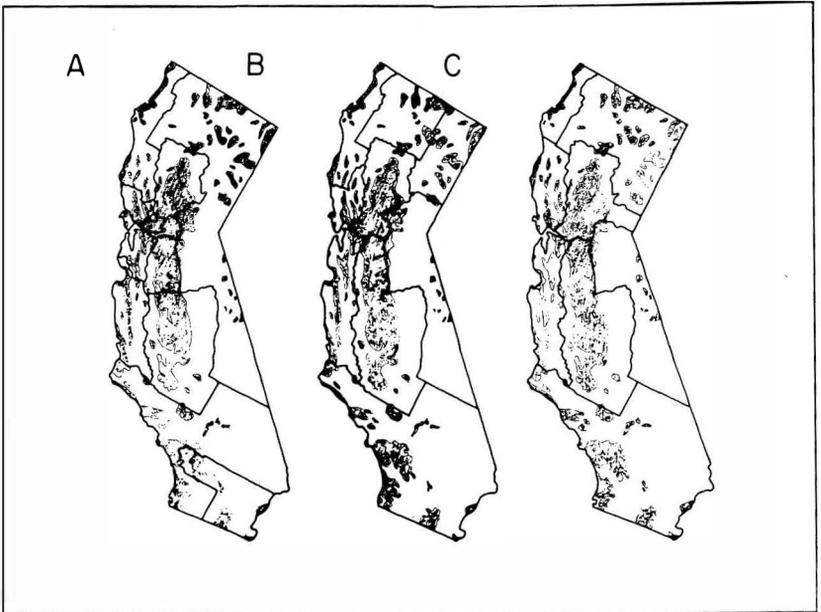


Fig. 1

tile to agricultural development. But this, however, is of little help if the topographic region includes highly diverse agricultural regionalisms, or if topographic boundaries are used as statistical-area boundaries in some places and ignored in others. The cases of the Central Coast and Southern California are, respectively, good examples of these discordancies.

*Boundaries of the Central Coast Region.* Both northern and southern boundaries of the Central Coast region, as used by the "state economic area" and "crop reporting district" systems, are evidences of boundary disharmonies. In the north, in Mendocino County, several of the interior valleys are included with the dissimilar agriculture of the north coast. The discrepancy is even greater for the state economic areas, since Lake County is also included in the North Coast area. However, it should not be forgotten that each regional system has a primary purpose, and one that does not necessarily include the characterizing of the agricultural region. The exclusion of Lake County from the Central Coast region and the inclusion

of part of the Sacramento Valley (Solano County) by the Census Bureau therefore becomes more logical, since the Bureau is also interested in Metropolitan Areas: Lake County obviously has little to do with the metropolitan complex of the Bay Area, while Solano County includes Vallejo, an important segment of the Bay Area urban complex.

In the south, both "state economic area" and "crop reporting district" systems allow such areas as the Santa Maria Valley to be incorporated in the more intensive fruit and nut region of southern coastal California. On the other hand, to include the valley in the Central Coast region would merely substitute one problem for another, since Santa Barbara County includes both the Santa Maria Valley and the Santa Barbara littoral.

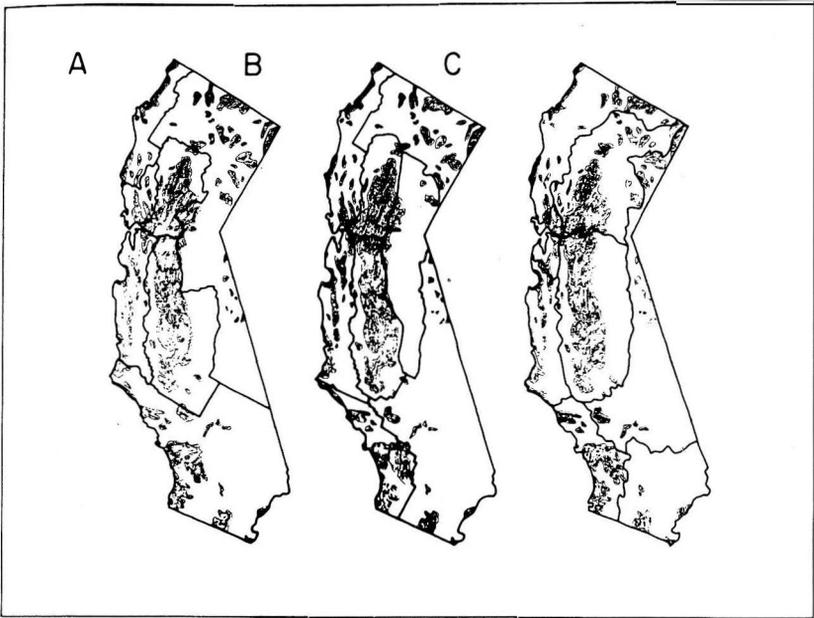


Fig. 2

*Coastal and Interior Southern California.* By far the biggest vexation to the agricultural geographer interested in California is the failure of regularly reporting statistical agencies to separate coastal and interior Southern California. One need not go into detail here on the many contrasts, not just agricultural, between such places as the Owens Valley of the "High Desert," the Imperial Valley of the "Low Desert," and the coastal region (South Coast). Only two of the eight counties that form the southern end of the state have boundaries which enable the researcher to make a clear division between coastal and interior agricultural regions: Ventura and Imperial. The Census Bureau uses the Imperial County line for part of the boundary of one of its state economic areas. This particular economic area (Number "8") also encompasses Riverside County, thereby including all principal agricultural regions of the Low Desert. Unfortunate-

ly, a statistical picture of Low Desert agriculture is still impossible since Riverside County includes significant croplands on both sides of the southern coastal ranges.

#### ATTEMPTS AT SOLUTION

Several governmental agencies and individuals have devised regional systems which correct some of these discrepancies between agricultural regions and statistical areas. The system set up by the Bureau of Agricultural Economics in the U.S. Department of Agriculture is somewhat unique in that it is designed expressly for representation of a particular kind of agricultural region on a geographic basis, *i. e.* the "Generalized Types of Farming." However, the regional system is not a vehicle for statistical reporting and is based on material that is already available to the Agricultural Census or unpublished Census data. Nevertheless, the value of the system to the researcher in agricultural geography puts it in a category of usefulness second only to the regionalization schemes of the Census Bureau and the state's Crop and Livestock Reporting Service.

Fig. 1-C shows the regional framework employed by the Bureau of Agricultural Economics. County boundaries are again used,<sup>1</sup> but their unit arrangements make for some improvements. By including Mendocino County in the northern part of the Central Coast region, all of the interior valleys are finally—and properly—excluded from the more oceanic type of agriculture in the North Coast valleys. This same maneuver, however, assigns a small coastal strip with agriculture similar to that of the North Coast to the Central Coast. The Bureau makes another improvement over the regional frameworks of the state economic areas and the crop reporting districts by including the cropland of Nevada and Placer counties within the Sacramento Valley region. Solano County, excluded from the Sacramento Valley by the system of state economic areas, is also included in the Valley by the Bureau.

Three other regional systems also try to use boundaries that are more conformable to the agricultural region. They are the "Farming Regions" of Shultis,<sup>2</sup> the "Physiographic Regions" of Crawford and Hurd,<sup>3</sup> and the "Major Hydrographic Areas" of the California State Water Resources Board.<sup>4</sup> Unlike the system of "types of farming areas," these three are designed for statistical presentations; but also unlike the systems of "state economic areas" and "crop reporting districts," they involve no periodical statistical surveys.

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<sup>1</sup> David Weeks offers an excellent comparison of two maps showing "generalized types of farming" for California and the Southwest, one showing the county boundary basis used for gathering statistics and the other geographic regions into which the data is translated. "Rural Land-Use Types and Regions," *California and the Southwest*, ed. Clifford M. Zierer (New York: John Wiley & Sons, Inc., 1956), Chapter 12, pp. 124-25.

<sup>2</sup> A. Shultis, *Agriculture in California*, Calif. Agric. Exper. Stat. Circular 474, 1959, p. 19.

<sup>3</sup> L. A. Crawford and E. B. Hurd, *Types of Farming in California Analyzed by Enterprises*, Calif. Agric. Exper. Stat. Bulletin 654, 1941, p. 37.

<sup>4</sup> California, State Water Resources Board, *Water Utilization and Requirements of California*, Vol. II, 1955, Plate 8.

Shultis' "Farming Regions" improve upon the regional structure of the state economic areas by eliminating the Solano County salient in the Sacramento Valley and including more of the northern interior valleys in the Central Coast region (Fig. 2-A). The Shultis system is almost identical to that of the crop reporting districts; it therefore also has the same disadvantages in comparison with the "type of farming" system outlined by the Bureau of Agricultural Economics.

The regional organization by Crawford and Hurd makes a notable advance by separating coastal and interior Southern California; the Santa Maria Valley is assigned to the Central Coast region (Fig. 2-B). On the other hand, several boundaries are drawn in such a way as to raise controversy, at least from the standpoint of land use uniformity. The creation of a Sierra Nevada region may be good for analysis of the livestock industry, but is poor from the crop standpoint in that it combines the agriculture of the eastern Central Valley margins with that of the valleys of the steppe interior. The inclusion of such areas as around Mono Lake with the agricultural areas of the Antelope Valley, and certainly with the Low Desert oases of the Imperial, Coachella, and Palo Verde valleys, is also questionable. Another inconsistency is the extension of the North Coast region southward to the Bay Area, thereby including the intensive fruit, truck, and mixed farming economy of the the North Bay counties with the more extensive dairying economy of the North Coast.

The closest approach to an agreement between the reporting area and agricultural region is that involving watersheds. The most thorough application of this regional system was made by the California State Water Resources Board for the 1946-53 period, when it organized land use data on the basis of seven major hydrographic areas and 129 hydrographic "units" (only the hydrographic areas are noted in Fig. 2-C). That the information was gathered during a period of several years rather than for just one season may perhaps be designated as one weakness. Another weakness is that no land use information other than acreage was collected.

#### BENEFITS OF AN IMPROVED REGIONALIZATION

Geographers will obviously have to content themselves with approximations of geographic areas for statistical purposes for a long time to come. In a country as large as the United States and where the Census Bureau budget is but one of many, costs will always remain a formidable barrier to any extensive expansion in research and publication programs. The rewards of an improved regionalization are great, however, and they will continue to stimulate attempts toward an improved correlation.<sup>5</sup>

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<sup>5</sup> For one such attempt at a more improved regionalization of California and its statistical revelations, see H. F. Gregor, "Agricultural Intensity and Its Regionalization," *Yearbook of the Association of Pacific Coast Geographers.*, Vol. 22, 1960, pp. 7-27.