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In August 2019, the Los Angeles County Board of Supervisors adopted OurCounty, an extensive and thorough regional sustainability plan for Los Angeles. The plan calls for equitable and sustainable land use and development without displacement, and key among its strategies for achieving this goal is an increase of housing density and a limit on urban sprawl. One identified action institutionalizes a county effort to “support the preservation of agricultural and working lands, including rangelands, by limiting the conversion of these lands to residential or other uses...” The Los Angeles County Department of Regional Planning (LACDRP) has been tasked by the Los Angeles County Chief Sustainability Office to identify responses that promote this goal.

In this brief, the Antelope Valley is framed as an important case study that highlights (1) the current state of California’s desert farmlands and (2) the impact solar might have on these rural places. Specifically, this brief describes the patterns associated with these lands by farmland quality, physical land uses, and zoning, and assesses how these characteristics might influence or be influenced by the relationship the land has with solar energy development. The brief then identifies policy mechanisms that the LACDRP can implement to better plan for both agriculture and solar. As such, the primary research questions of this endeavor are as follows: What is the status of agricultural land in the Antelope Valley, and what is its relationship to solar? How do present-day land use conflicts for agriculture and solar impact the future of the Antelope Valley? How can the County plan for both the preservation of agriculture and the development of renewable energy?

Study Methods

The first two questions were addressed using secondary, spatial data sources made available to the LACDRP. Zoning, parcel use, and farmland quality datasets were merged to identify interesting overlaps and patterns. Satellite imagery was also used to identify the historical, physical land uses of ground-mounted utility-scale projects approved or in review. Then, a set of new spatial datasets were produced to identify areas in which the development of agricultural and ground-mounted, utility-scale solar land uses might

be feasible, and to determine how the physical land use realities of these sites might infer conclusions on how to preserve agriculture and promote solar in the Antelope Valley. The final question was addressed by interviews with planners from different jurisdictions.

Research Findings

While the highest value categories of farmland have declined in the past several decades, the lowest value categories of farmland have expanded in size (Figure 1). Agricultural zoning appears to be correlated with the preservation of high-value agricultural lands, with highest quality farmland most commonly found in Zone A-2. Notably, nearly all of the farm-related physical land use categories described in this report are sited in Zone A-2.

Lands zoned for agriculture are overwhelmingly used for residential land uses, as opposed to agriculture. In fact, farming activities make up just 1.37% of the Light Agriculture zone, Zone A-1, and just 5.72% of the Heavy Agriculture zone, Zone A-2. These areas are predominantly dominated by single-family dwellings and mobile homes.

Nearly all ground-mounted utility-scale solar projects in the Antelope Valley have been sited on undeveloped, vacant land located in Zone A-2 and not on land that is historically, physically agricultural. This research, therefore, finds that housing presents a greater land use conflict to agriculture than does solar, and that housing simultaneously presents some conflict to solar development. Therefore, as the LACDRP establishes strategies to improve the environmental impacts of existing land use practices, it will be critical to preserve agriculture and promote solar by planning housing sustainably.

Recommendations

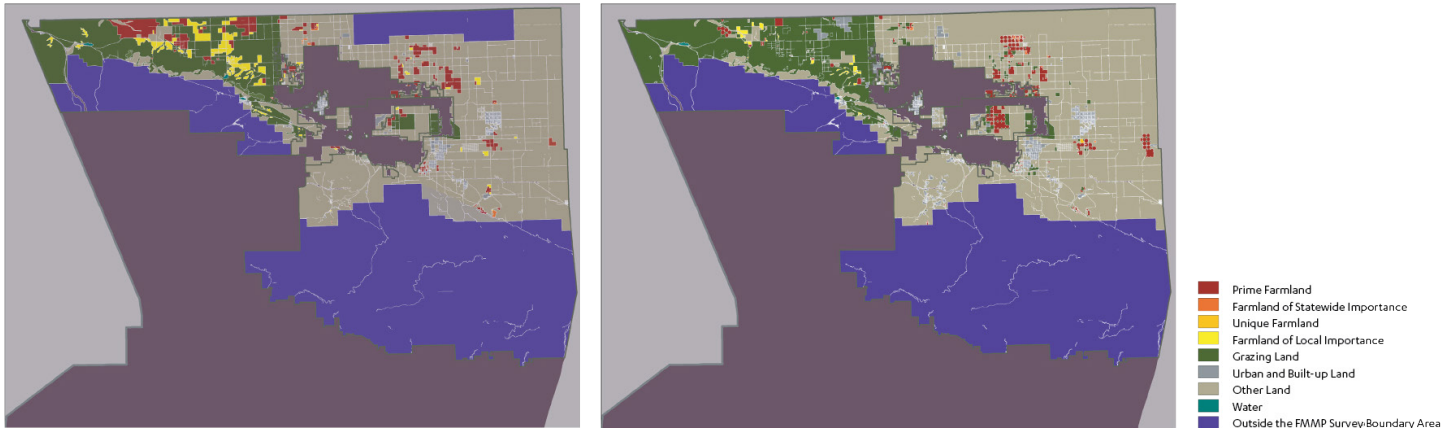
Related to the Preservation of Agriculture

- » The county should prioritize the preservation of agricultural activities in areas where residential uses are allowed to be developed, as housing is more readily developed than ground-

Figure 1.**Maps of Distribution of Important Farmland in 1984 and 2018**

Map 1. Distribution of Important Farmland in 1984

Map 2. Distribution of Important Farmland in 2018



mounted utility-scale solar, and appears to be imposing the greatest shift of land use from agriculture.

- » The county should also consider upzoning closer to town cores and limiting built expansion in agricultural zones. The county should emphasize this effort on Zone A-2, in particular, as the category was found to have more agricultural physical land uses and higher quality farmland than Zone A-1.
- » Relatedly, the county should promote the development of residential uses in urban, as opposed to rural, places. This will discourage the conversion of agriculturally zoned lands into residential uses.
- » The county should focus future rezoning efforts on environmental qualities such as soil type and water access, to establish land use ordinances that address physical and environmental limitations of the land.

Related to the Development of Solar

- » The county should encourage the development of ground-mounted utility-scale solar on degraded land, even if that land is agricultural (so as to allow farmers a meaningful exchange of their livelihood for profit off the land).
- » The county should also consider how efforts to decarbonize the local grid may be better supported through rooftop solar or community grids, as these strategies mitigate concerns vocalized by opponents of utility-scale development.

Future Areas of Research

The following points summarize research opportunities the LACDRP should pursue to produce a more socially and environmentally just analysis of current and future land use outcomes in the Antelope Valley:

- » Opportunities to support Indigenous land practices in the Antelope Valley. Industries that extract from the land should be guided by the input and leadership of the people to which the land belongs.
- » The socioeconomic and racial implications of sprawling urban development and utility expansion in rural, agricultural places. Planning should be used as a tool to create healthy communities and supportive livelihoods, not as a tool to disinvest or further extract from specific populations.
- » A cost-benefit analysis of utility-scale development versus rooftop or community solar for Los Angeles County. Potential costs to consider include: greenhouse gas emissions, utility fees, and utility reliance.

Acknowledgments

This report was completed in the ancestral and uncended homeland of the people of the Tongva tribe, and the area researched in this report is the traditional, uncended land of the Serrano people. The history of Los Angeles's land use practices and the disenfranchisement of Indigenous voices are critical to the understanding of the area we are planning for and the role we play in that legacy.

For More Information

Farr, I. T. (2021). Opportunities for Agriculture and Solar in the Urban Fringe: The Antelope Valley as a Case Study (Master's capstone, UCLA). Retrieved from: <https://escholarship.org/uc/item/5dm8c72n>