Apples and Experts: Evolving Notions of Sustainable Agriculture

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Current advocates of sustainable agriculture in the US posit that our food industry needs to recover from the deliberate missteps of the pioneers of chemical dependency and market-driven cultivation techniques that ushered in an age of industrial agriculture at the turn of the 20th century. A careful look at early 20th century agriculture in California, the theoretical ground zero of environmentally abusive cultivation techniques, reveals that this food industry history is more complex than it seems. Using the Central Coast of California as a case study, this article argues that a nexus of ambitious growers and a growing state agricultural bureaucracy worked to create a "brand name" and teach cultivation approaches that would buoy their local industry with increased production and expanded markets. But these same actors also embraced these changes with all due caution, keeping the long-term health of the industry and the community in mind. Whereas traditionally this juncture in California agricultural history is described as the moment where farmers sold out their traditional stewardship of the land for higher profits and chose non-sustainable agricultural practices, many growers actively pursued sustainable agriculture, at least as understood by them. In navigating market demands and technological changes, they made choices based on both economic grounds, and a modified agrarian ethic, shaped by concerns for environmental and social stability similar to the modern sustainability movement. Using examples ranging from state-sponsored erosion programs to local immigration policy, this article reveals a community that consciously made economic choices to keep up with larger competitors, but also monitored the impact of monoculture on their land and balanced an agrarian ideal with an increasingly ethnically diverse populace and a burgeoning class division. Their concern for social, economic and environmental stability reveal that there were more than market-driven missteps behind the emergence of our current system.

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A looming issue in environmental history in North America (and beyond) is the growing use by the general public of the concepts of "sustainability" and "sustainable agriculture". One thing that environmental historians at this point seem to agree upon is that the definition of "sustainability" is a difficult one to pin down. Inside academia and out, the concept is often misused interchangeably with "environmentally sound" or "conservationist", giving short shrift to its more complex, layered

meanings that include economic health and social equity as pivotal aspects of a sustainable society or practice.[1] Nonetheless, the concept's environmental overtones land it squarely in our purview as environmental scholars and educators, and therefore it is a concept with which we must wrestle.

At this juncture, environmental historians are faced with a concomitant challenge: historicizing the concept of sustainability. If sustainability is somewhat of a moving target – an ideal to which societies aspire within their shifting economic, social, and environmental contexts – then it makes sense that what defines sustainable behavior will change over time. This article addresses the specific problem of sustainable agriculture in history, and argues that we should understand "sustainability" as an *evolving* notion of what constitutes appropriate practices, rather than a set prescription that growers have either embraced or neglected, regardless of the cultural and historical context.

The phrase "sustainable agriculture" is particularly tricky as it carries a modern connotation imbued with the food politics of our contemporary society. Recent works critiquing the current food industry evoke a romantic notion of agrarianism – which largely disappeared from the United States by the end of the 19th century – as the quintessential method of cultivation, representing a balance of environmental, economic, and social health. In this conversation, food scholars and agricultural reform advocates therefore see sustainability in agriculture as something that was lost in the past that needs to be recovered. Agricultural environmental historians are well -positioned to analyze this perceived "loss", and what prompts societies to move away from seemingly healthful and sustainable practices.

The transition to "modern agriculture" in the United States at the turn of the 20th century weighs heavily in this perception of loss. The new agriculture of the early 1900s in some senses represented a significant departure from its agrarian predecessor. Generally speak-

[1] See R. Goodland, "The Concept of Environmental Sustainability", in *Annual Review of Ecology and Systematics*, 26, 1995, pp. 1-24. For excellent discussion of the discussion over this contested definition in academic circles see A. Reid, P. Petocz, "University Lecturers' Understanding of Sustainability", in *Higher Education*, 51, 1, 2006, pp. 105-123.

ing, farming became a market-driven industry focused on growing profits. The transition often signaled the abandonment of small-scale diversified agricultural holdings that produced for self-subsistence or, at most, local markets, and ushered in monocrop cultivation (i.e., specialization in one cash crop). And in the case of horticulture, the market shift meant growing dependency on a mobile labor force to harvest perishable crops for transportation to even more distant markets. It produced crops that, without rotation, exhausted the soil and nourished threatening pests. All of these characteristics rightfully inform the modern notion that the advent of commercial horticulture led growers away from sustainable agricultural practices, at least by 21st century definitions of sustainability. Further, in the lore of agricultural history, modern agriculture also brought about the final demise of the small farm, the agrarian community, and the farmer who worked his own land, and ushered in industrial agribusiness.

This vision of the agricultural past is both myopic and inaccurate. It offers a devolutionist tale of capitalist greed, in which farmers sold out their traditional stewardship of the land for higher profits, and chose unwise practices over the sustainable methods of the past. This view obscures the complexity of grower culture in the era of transition. If there was a genuine path of consistent sustainable choices for agriculture, the reality is that, over the course of the 20th century many United States growers never left that path, at least not as they understood it. In other words, as the context of agro-scientific knowledge evolved with the introduction of new research and cultivation techniques in the 20th century, what growers saw as sustainable, responsible practices changed over time.

This essay explores the actions of growers in one U.S. agricultural region of the US, and considers the manner in which growers adopted new and eschewed old practices in order to unlock the historicity of the concept of sustainable agriculture. This piece begins this process by revisiting the agricultural history of this region in the first decades the 20th century, as growers navigated significant changes in cultivation practices. It examines the relationship between growers and state-sponsored agro-scientific programs in Santa Cruz County, California, in the western US to illuminate how and

why farmers made the cultivation decisions they did. Santa Cruz County in Central Coastal California is renowned for its pioneering role in the sustainable agricultural movement that began in the 1960s. But previously, this region's growers joined agriculturalists across the country in embracing monocrop cultivation and widespread pesticide use that had become prevalent in the 20th century. To a significant degree, growers across the United States, shared the changes associated with "modern agriculture", as defined above. While a case study approach may be limited in *conclusively* revealing national trends, it is a crucial step in accessing the reasoning of growers and agricultural communities as they adopted specific practices or approaches over time. This closer view reveals Central Coast agriculturalists consciously attempting to mitigate perceived sources of economic, environmental, and social instability.

This study contributes to and compliments recent work in U.S. agricultural history. It integrates recent trends in environmental history by introducing the contested concept of "sustainability". In tracing the cultural history of the concept, this work lands squarely in the "new rural history", which since the 1980s has sought to put the "culture" back in "agriculture". Recent important works in U.S. agricultural history have begun to afford agency to the grower, and to show that, in the transition from local family farm to national market-driven industry, farmers were not simply caught up in the promise of larger profits, eschewing their past identities as caring cultivators. These works suggest there was no simple dichotomy between old-fashioned agrarianism and "modern" (circa. early 20th century) agriculture.

This more nuanced treatment of turn-of-the-twentieth-century agriculture has only recently begun to appear in histories of California agriculture. Historians have long cast California's agricultural past as distinct from the rest of the American nation. Its narrative is nearly devoid of the small family farm and, until recent years, the literature assumed a preponderance of the large-scale agro-industrial enterprises that emerged with modern agriculture. This assumption is largely rooted in the influential work of social reformer Carey McWilliams, who painted a compelling picture of distanced large-scale landowners and armies of faceless, disenfranchised (and largely

foreign ethnic) workers who toiled in "factories in the field". The history of California's small agrarian communities, and in turn, their grower cultures, has only recently appeared in studies purposefully seeking to unseat the McWilliams paradigm. Many of these recent works provide a more nuanced history by looking closely at cultural, economic, and ecological dynamics in the smaller regions of California's agricultural empire. They address labor issues, race, gender, and even offer glimpses of a conservation ethic among growers. What remains to be written is a synthesis that reveals how all of these aspects together shaped the decisions growers made in their efforts to ensure the stability of their industry and their communities. "Sustainability" provides the ideal lens to bring all of these perspectives together.[2]

The Santa Cruz apple industry in this region reveals growers attempting to navigate the changing economic and technological context in which they produced their crops. They pursued cultivation

[2] For the historiography noted above, see H.S. Barron, *Mixed Harvest: The Second Great Transformation in the Rural North, 1870-1930,* University of North Carolina Press, Chapel Hill, N.C. 997. B. Donahue, *The Great Meadow: Farmers and the Land in Colonial Concord,* Yale University Press, New Haven 2004. G. Gonzalez, *Labor and Community: Mexican Citrus Worker Villages in a Southern California County, 1900-1950*, University of Illinois Press, Urbana 1994. L. Ivey, "Ethnicity in the Land: Lost Stories of California Agriculture", in *Agricultural History*, 81, 1, 2007, pp. 98-124. C. McWilliams, *Factories in the Field: The Story of Migratory Farm Labor in California,* Archon Books, Hamden 1969 [c1939]. M. Neth, *Preserving the Family Farm: Women, Community and the Foundations of Agribusiness in the Midwest, 1900-1940,* Johns Hopkins University Press, Baltimore 1995. D.C. Sackman, *Orange Empire: California and the Fruits of Eden,* University of California, Berkeley 2005. S. Stoll, *The Fruits of Natural Advantage: Making the Industrial Countryside in California,* University of California Press, Berkeley 1998. C. Tsu, " 'Independent of the Unskilled Chinaman': Race, Labor and Family Farming in California's Santa Clara Valley", in *The Western Historical Quarterly,* 37, 4, 2006, pp. 474-495. I. Tyrrell, *True Gardens of the Gods: Californian-Australian Environmental Reform, 1860-1930,* University of California Press, Berkeley 1999. D. Vaught, *After the Gold Rush: Tarnished Dreams in the Sacramento Valley,* Johns Hopkins University Press, Baltimore 2007. D. Vaught, *Cultivating California: Growers, Specialty Crops, and Labor, 1875-1920,* Johns Hopkins University Press, Baltimore 1999. D. Weber, *Dark Sweat, White Gold: California Farm Workers, Cotton, and the New Deal,* University of California Press, Berkeley 1994.

choices based not only on economic grounds, but also on an evolving agrarian ethic that encompassed environmental, economic, and cultural concerns similar to those of the modern movement. Expanded markets and profits were attractive, especially to the degree that they kept growers in business. But as much as early 20th century growers embraced a new identity imbued with modernity and business acumen, they clung to a previous identity as stewards of the land. In navigating the transition from small-scale local production to commercial horticulture, local growers consulted a battalion of outside experts to guide their pursuits, gaining them not only increased profit but also long-term productivity. The result was not a one-way diffusion of "official" knowledge, directing national agriculture in a specific course, but rather a two-way relationship, an exchange of agro-experts' science and local growers' experience. Within the nexus of this relationship, a negotiation took place as to what constituted appropriate cultivation decisions suitable for the local environmental conditions. Both groups carefully watched the impact of intensified production and chemical applications. They changed course when they saw fit. The outcomes of their choices were, in part, ecologically and socially destabilizing, but this result is visible largely only in hindsight. The growers' proactive role in their work with agro-experts shows them attempting to protect what they perceived as the environmental stability of their land. Their efforts illustrate that sustainable farming did not disappear with the advent of modern agriculture, but rather it evolved over the course of the 20th century.

Developing a sustainable apple industry

To begin the process of problematizing and historicizing the concept of sustainability and the practices of sustainable agriculture, the following pages look at one particular region and one crop within that region, and examine how one cast of historical actors navigated changes occurring nationwide in the business of growing food. On the local level, we witness a careful balancing act as growers sought to achieve social peace, environmental stewardship, and economic development.

Santa Cruz County was home to significant apple orchards, and

this crop was a key component of the region's economic success both in profit and in building a brand name. Like most agricultural regions in California, the county left behind in the 19th century any vestiges of the busted wheat industry or traditional, small-scale, diversified production. Apple culture began in this area in 1854, and locals had long bragged that their valley that was "unsurpassed for the extent and fertility of its agricultural lands" and perfectly suited towards the more "gentlemanly" pursuit of growing fruits and vegetables.[3] Apples catapulted the Pajaro Valley, the agricultural heart of this region, into the modern agricultural industry of the early 20th century.

The cultural history of Santa Cruz County apples reveals a community deeply invested in its local agricultural industry and identity. Early century county fairs show local growers meshing typical boosterism and civic celebration with a clear sense of the shifting business of agriculture and a determination to preserve the long-term health of their environment, economy, and community.[4] The town of Watsonville, for example, hosted annual apple shows for several years. When the third annual California Apple Show opened in 1912, contemporary local newspapers noted that, in just a few years, these "Apple Annuals" had grown from a regional community effort to promote the crop, into cooperative marketing extravaganzas. By then, the region could brag of annual exports exceeding 4,000 boxcar-loads, equaling approximately 2 million boxes or 240 million apples. Speaking to the new age of modern agriculture, the widely distributed agricultural journal *Pacific Rural Press* noted that, "no more effective advertising could be secured by any community".[5]

[3] E. Harrison, *History of Santa Cruz County*, Pacific Press Publication Company, San Francisco 1892. *Pajaro Times*, 5 May 1863, p. 2.

[4] As further testament to the cultural attachment to this crop, before the turn of the 20th century, Watsonville adopted the nickname "Apple City", or by some accounts "The Big Apple". The Hotel Appleton opened downtown in 1912 to cater to the visitors of the popular annuals. The local baseball team was the Watsonville Pippins, after a popular variety of apple grown in the region. The Pajaro Valley indeed enjoyed significant "brand name" recognition, as the premier apple-growing region in the American west.

[5] "Watsonville Apple Show", in *Pacific Rural Press*, 10 October 1912.

A local editorial further noted that apples were not solely valued for revenue generated, but appreciated for the fact that apple cultivation was "rapidly developing into a science".[6]

Not only was the commercial production of apples impressively modern, so too were the growers behind the crop. When A.J. Wallace, Lieutenant Governor of California, spoke opening night of the 1912 Annual, he was optimistic about the promise of the fruit business. He "extolled the orchardist and small farmer as the man who was realizing the greatest wealth from the soil of the state and contributing in turn the greatest energy to the development of urban industries".[7] Other community observers remarked on the man behind the apple as well, being certain to distinguish the new farmer of intensive, productive horticulture from his old-fashioned agrarian predecessors: "the farmer and the orchardist of the future is not to be a 'Rube'. He is to be 'a superior person'".[8] The local Chamber of Commerce, too, celebrated their growers' contribution to the notable success of their local industry, publishing an advertisement in the well-read travelogue magazine *Sunset* proclaiming "Our Farmers Are Our Capitalists", putting a modern sheen on their old-fashioned vocation".[9] These pronouncements offered clear recognition of the changes happening in agricultural science, and celebrated local growers' adoption of new techniques. Indeed, spokesmen heralded the move away from traditional practices as embrace of the modern, a shift that protected the local industry from becoming outdated or endangered. Community and agricultural publications applauded growers for their efforts to bring the county and its crops into the modern age.

It took a dedicated grower culture to maintain the county's status as one of the top producing apple regions of the West, given the powerful changes in horticultural sciences and industry emerging in

[6] Santa Cruz *Surf*, "Random Observations on the Apple Show and its Significance", 12 October 1912.

[7] San Francisco *Call*, "Apple Show Opens in Watsonville", 8 October 1912.

[8] Santa Cruz *Surf*, "Random Observations on the Apple Show and its Significance", 12 October 1912.

[9] *Sunset*, December, 1907. Collections of the Pajaro Valley Historical Association.

the first half of the 20th century. The apple industry was more than a business: it remained central to local identity. It was a socially integrating force that also provided a base of economic stability through the Second World War. Orchards dominated the Santa Cruz County hillsides, and as late as 1940 (the beginning of the apple's demise in the Pajaro Valley) still accounted for over 10,000 of the approximately 55,000 acres under cultivation there. Advances in cold storage helped to buoy exports, and apples supported lucrative side-industries. Martinelli's juice and vinegar works opened their doors in 1868, and by the turn of the century was known statewide and beyond. Apple drying also quickly grew as a side industry, critical to industry success in the era before cold storage technology in transportation became widespread. By the 1940s, apples were bringing in a gross return of $2,500,000, three-fifths of which was for fresh fruit, and the other two-fifths by-products, including dried apples and cider and vinegar production. Twenty-five apple-packing plants were functioning in Watsonville itself, with three more in the neighboring town of Pajaro. In addition, about 15 apple dryer plants also operated in Watsonville.[10]

Interestingly, apples also supported a cross-cultural population in the valley, speaking to a local concern for community-wide integration and investment in the brand name of the Pajaro Valley. Growing itself became largely associated with the valley's large immigrant population from Croatia, as well as its Anglo and Portuguese growers. The Martinellis were a Swiss-Italian immigrant family, and local Chinese immigrants largely dominated the local apple dryer businesses in the early 20th century.[11] For growers in the early years of the

[10] "Pajaro Valley Agriculture Valued at $9,000,000", in *Watsonville (Calif.) Register-Pajaronian*, 16 April 1940, p. 3.

[11] On Croatian contribution: R.E. Gibson, "Agricultural Legacy of Serb-Croats", in *San Jose (Calif.) Mercury News*, 1 August 1995, p. 2B. L.P. Cikuth, *Luke P. Cikuth: The Pajaro Valley Apple Industry, 1890-1930*, interview by Elizabeth Spedding Calciano, 1967, transcript, University of California Regional History Office, Santa Cruz, Calif. Mary Ann Radovich, interview by Meri Knaster, 7 June 1977, transcript, University of California Regional History Office, Santa Cruz, Calif. On Chinese, seeWatsonville *Pajaronian*, "Development of Apple Drying

20th century, investing in apple culture was an investment in a specific sense of community, as well as a long-term, sustainable crop.

By modern definitions, however, the apple industry of the early 20th century does not appear to reflect sustainable agricultural practices. Despite the economic and social stability this crop provided on some levels, in hindsight at least, contemporary apple cultivation practices were somewhat precarious, in ecological terms. Based on the advice of published horticultural experts, growers in the late 19th and early 20th centuries largely practiced two approaches that invited significant soil erosion and fertility loss: square planting (planting the trees in straight rows), and refraining from planting ground cover. Edward J. Wickson, Dean of the College of Agriculture of the University of California from 1906 to1912, promoted this "clean cultivation" technique for aesthetics and weed control. At times, growers also eschewed ground cover between the trees for fear that the cover plants would compete for water, affecting the health of the trees and the quality of the product.[12]

Perhaps even more insidiously divorced from contemporary perspectives on sustainability, apple culture was largely responsible for the development of one of the most prolifically used pesticides of the 20th century. When the codling moth came to the region at the end

Industry in the Pajaro Valley", 5 September 1918, p. 2. Quoted in R. Fong, "Apple Drying and the Chinese in Watsonville, CA", in *The Other Side of Main Street: A Collection of Oral Histories of Ethnic Peoples: Watsonville, CA*, P. Castillo (ed.), University of California, Santa Cruz 1979, p. 100. Newspaper unknown, dated 8 January 1901. Collection of the Pajaro Valley Historical Association. S. Lydon, *Chinese Gold: The Chinese in the Monterey Bay Region*, Capitola Book Company, Capitola 1985, pp. 399-400. For more details on the multiculturalism in this local industry see L.L. Ivey, "Ethnicity in the Land: Lost Stories in California Agriculture", in *Agricultural History,* 81, 1, 2007, pp. 98-124.

[12] For specific guidance on square planting and clean cultivation, see E.J. Wickson, *The California Fruits and How to Grow Them*, 2nd ed., Dewey & Co., San Francisco 1891, p. 125. The fear of water competition was based in traditional thought, and heightened in the early 1920s when during a drought in the Farm Bureau promoted the same for a limited period. Many growers kept up this approach beyond the duration of the drought assuming orchards would safely thrive in all conditions without said competition. *Santa Cruz County Farm Bureau Monthly*, 3, no. 3, March 1920, p. 1.

of the 19th century, the community struggled to find a pesticide that would combat the worm without damaging trees. The community leaned on outside expertise, inviting University of California scientists William H. Volck and E. Ellersile Luther to find a solution. They eventually traced the problem to moisture, explaining that, "the daily wetting of the apple leaves by the ocean fog in this district caused acid lead arsenate to dissolve in quantities sufficient to burn leaves."[13] With the enthusiastic urging of the local county agricultural commissioner and Pajaro Valley grower Charles E. Rogers, Luther and Volck sought a chemical compound that would function appropriately under the Pajaro Valley's specific climatic conditions. Commissioner Rodgers, in fact, set aside part of his own orchards for experimentation, illustrating a perennial cooperation between grower and agro-expert: the demonstration plot. Eventually these two scientists created a new form of lead arsenate that stayed bonded in wetter conditions. By 1906 Luther and Volck were working on a patent for an inexpensive and safe lead arsenate marketed under the brand name ORTHO.[14]

Again, historical context is the key to understanding local events. Up through the Second World War, agriculturalists and locals saw the ORTHO spray as "a discovery incalculable to fruit growing".[15] The codling moth had devastated nearby markets in the Santa Clara Valley and elsewhere. Growers perceived the spray as beneficial to preserving the long-term economic health of the industry and, inconceivable by current reckoning, a benefit to the environment. The moths damaged the trees, and the health of the trees was of paramount importance to orchardists. Thus, growers saw eradication of the pest as the means of preserving the health of the land and protecting their long-term investment in the trees. Operating within their own contemporary knowledge base, within that specific

[13] "California Spray-Chemical Company Celebrates Twenty-Fifth Year", in *Ortho News*, 4, 3, 1931, p. 1.

[14] For a solid discussion of the ORTHO development in the Pajaro Valley, see S. Stoll, "Insects and Institutions: University Science and the Fruit Business in California", in *Agricultural History*, 69, 2, 1995, pp. 235 -239.

[15] Article title unknown, *Pacific Rural Press*, 192. Reprinted in B. Lewis, *Watsonville Yesterday*, Litho Watsonville Press, Watsonville 1978, p. 129.

context, growers were investing in their land and in the local brand name of the Pajaro Valley using a safe, cutting-edge technology.

Obviously, it is uncomfortable in the early 21st century to argue that the development and widespread use of pesticides in 1906 is evidence of growers' ongoing commitment to sustainable agriculture. In some senses, it is impossible to characterize the cultivation choices made in the first decades of the 20th century as sustainable. However, if we look carefully at the modern definition of sustainable agriculture, it describes the pursuit of an ideal: an effort to balance the health of a community, economy, and ecology of an agricultural region. Over time, any understanding of what constitutes an environmental threat or an economic benefit is bound to change, pending the evolution of knowledge. The practices of monoculture, clean cultivation, and the development and use of ORTHO speak to a specific community in a particular time navigating a new form of agriculture, commercial horticulture. Farmers were adjusting to growing primarily one crop for market, in the most efficient way possible, and they were learning to cope with the ecological impacts of monocrop cultivation on the land. The long-term repercussions of their choices were not yet known.

Orchardists and experts: evolving notions of sustainability and soil

Another key piece of this story of agricultural evolution is the manner in which growers accessed news of technological agricultural innovation, and how they chose to apply it. Today the impact of monoculture on soil is well documented. How local growers responded as impact became known, and how they turned to newer research in their efforts to mitigate soil health issues, illustrates how notions of sustainable practices evolved over time. Continued grower involvement in the development of local industry showcases a mindful grower community, dedicated to the long-term stability. From the turn of the 20th century, we find a deep record of consultation between local growers and the growing class of agro-scientists eager to share the latest in research and cultivation techniques.

In the early 20th century, the Cooperative Extension Service was a

prominent agency in the fields of the US. It was staffed and guided by local university systems, funded by the federal government, and aided by local growers in the development of new agricultural research and technology.[16] Scholars have since vilified the Extension Service as a key player in the adoption of what we now see as unsustainable practices.[17] And yet, within the context of early 20th century agricultural research, it is difficult to assume knowledge of the long-term impact of recommended practices. What is clear is that a close look at the history of Extension work further highlights the on-the-ground interaction between local extension agents and the growers themselves, spotlighting the active role of the grower, and revealing how local knowledge and local environments contributed to negotiated definitions of appropriate cultivation practices. This approach illuminates a range of subtle back-and-forth shifts, as advice beget impact beget change over time, as the rapid infusion of technologies ranging from the chemical to the mechanical brought on environmental change, and constantly changed the ecological context of successful techniques.

Community-based organizations like the Farm Bureau effective-

[16] In 1862, the United States Department of Agriculture was created, and the subsequent passage of the first Morrill Act altered community organization in rural regions. The emphasis with the creation of this department and the passage of this bill was on education; part of the Morrill Act stipulated that land be granted from the public domain to each state for the establishment of a college for the agricultural and mechanic arts; these would become known as "land grant colleges". Furthermore, as part of the 1887 Hatch Act, "experimental stations" would be developed at each school. This was a rough blueprint for the work the Extension Service and other federal programs would eventually conduct in the fields of California in the form of demonstrations. In 1914, the Smith Lever Act provided a basic grant for each state, with expenditures to be matched by the state or in some cases the locality, for outreach through instruction. This was the birth of Extension with a capital "E"; a state office was organized for each land grant college, with a director and county agents. These county agents, like Santa Cruz's first advisor, Henry Washburn, would bring the University's knowledge to the land. See W.J. Block, *The Separation of the Farm Bureau and the Extension Service: Political Issue in a Federal System*, University of Illinois Press, Urbana 1960.

[17] J. Hightower, *Hard Tomatoes, Hard Times: A Report of the Agribusiness Accountability Project on the Failure of America's Land Grant College Complex,* Schenkman Pub. Co, Cambridge, MA 1973.

ly brought the growers into the process, facilitating an exchange of information, and helping shape the surrounding community into an involved and proactive body. Farm Advisors, representatives of Extension that worked through the Farm Bureau, steered interaction between the university and the field. They also reported on this work and regularly appear as authors in official Extension bulletins. In these bulletins, the co-creation of prescribed practices, as well as their local impacts, becomes clear. Because of the variation in climate, water resources, and soil fertility across the state and the nation, cultivation information had to be tailored to the local experience, so in many cases the information thus disseminated germinated in local sources. Extension programs – though national in reach – thus became truly local entities. Local climate and geography, not to mention demographics, shaped advice from that office. At times, local growers' knowledge made its way into official literature of Extension. Growers and agro-experts were working in consultation, redefining what was an appropriate relationship to the land.[18]

Another key point of interaction between growers and Extension agents was the demonstration plot. Demonstration plots also illustrate the involvement of local growers as essential to the development and the dissemination of cultivation advice. The work on local demonstration plots reveals the process of making adjustments to previous practices that had been promoted as beneficial, *but in time had begun to prove otherwise*.

Demonstration plots were valuable, because dramatic changes in planting techniques could prove costly. The demonstration plot, implemented by a local grower and guided by Extension, became

[18] Henry Washburn, the first Farm Advisor in the Pajaro Valley, authored the bulletin "Apple Growing in California", reflective of his work in this particular region and his close consultation with local growers. In the 1930s, when motion pictures were added to the forms of media Extension used to disseminate its information, Washburn noted that "past available motion pictures were not only lacking in (local) details and methods, but were of particularly little use in this county, and yet, farmers wanted pictures. To save time, we made our own". See H. Washburn, *Looking Backward Twenty-Two Years, December 1, 1917-November 1, 1939*, Book I, Records of the Agricultural History Museum, Watsonville, Calif.

a key means of convincing local growers to break from tradition. These plots showcased the benefits of new approaches and sometimes changed the way growers farmed their land. The Pajaro Valley apple industry perennially benefited by a local grower "donating" a small acreage to test new approaches or technologies, which ranged from experiments in cultivation techniques to significant changes in soil management practices. In the late teens, for example, Extension pushed "long pruning" (a light thinning rather than a more aggressive pruning) as the latest in beneficial orchard management. In 1918, local resident Eldon Dye employed this practice on a demonstration plot on his ranch. Between 1923 and 1931, 792 growers attended ten meetings to watch the demonstration in progress. The experiment seemed to pay off: in 1928, Dye took first place at the State Fair with those very apples.[19] In another example, Farm Bureau reports provide evidence of the shift away from square planting. In 1919, local grower Thomas Todd tried out contour planting in his hilly orchard, breaking away from the previously recommended square planting approach. He reported that it "makes the plowing and cultivation much easier… (and) also prevents erosion."[20] The willingness of select growers to host demonstration plots geared towards sharing land-saving techniques with their neighbors reveals a culture committed to sustainability as well as staying current with modern cultivation practices. Over 120 Extension Service demonstrations occurred on local farms between 1917 and 1929.[21]

While pesticide application and pruning techniques were popular experiments, the soil of the Pajaro Valley became a predominant focus of demonstration plots. Because of the diversity of the soil within the Valley, the Extension service regularly provided advice on soil-specific cultivation practices, soil conservation techniques, and maintaining

[19] Reports on the progression of this experiment appeared in various local papers throughout the time period. See Washburn, *Looking Backwar* cit.

[20] "Plants Fruit Tree on a Side Hill", in *Register-Pajaronian*, 24 January 1925. MS 31, Box 5, Washburn Collection, McHenry Library Special Collections, University of California, Santa Cruz.

[21] "Farmers of Santa Cruz County: You Have a Record to be Proud of in Real Farm Relief", Santa Cruz County Farm Bureau, Santa Cruz 1929, p. 2.

soil fertility. With thousands of acres planted to apples in the Pajaro Valley's hilly regions, soil erosion was a constant plague to orchardists, as they struggled to balance careful cultivation with the demands of productivity required to keep them in business. The health of the land was important in their efforts towards a sustainable agriculture, but so too was the health of their local economy. The battle to stem soil erosion is a telling example of the impact of negotiations between growers and outside experts on land use, clearly illustrating the evolving, negotiated definitions of sustainable cultivation techniques.

The United States Federal Government and changes in cultivation strategy

This negotiation came into bold relief during the 1930s, when economic depression coincided with a national call to save the soil. As part of the initiatives sponsored by President Franklin D. Roosevelt's New Deal, the federal government's comprehensive relief program, government agents descended in unprecedented numbers into U.S. fields of the US with a mission to curb soil erosion.[22] Certainly, the soil disasters of the mid western United States brought the problem of aggressive cultivation to the foreground of national agricultural policy and relief.[23] To address the ecological situation at hand, Roosevelt established the Soil Erosion Service as part of the Department of the Interior in 1933. Two years later Congress passed the Soil Conservation Bill, which "recognized that the conservation of our soil and water resources on the farm lands of the nation was a matter of public welfare". The administration then moved the service to the Department of Agriculture and re-named it the Soil Conservation Service (SCS).[24]

[22] See C. McFayden Campbell, *The Farm Bureau and the New Deal: A Study of the Making of National Farm Policy, 1933-1940*, University of Illinois Press, Urbana 1962.

[23] The massive ecological disaster of the middle part of the United States in well-documented case of the aggressive agricultural practices of the 20th century pushing the limits of the soil. See D. Worster, *Dust Bowl: The Southern Plains in the 1930s,* Oxford University Press, Oxford/New York 1979.

[24] G.W. Gosline, "Project Monograph. Corralitos Creek Project. Calif-2",

Nationalist rhetoric bolstered an action ethic. In this era, the "official" patriotic and moral duty of farmers was no longer just to produce, but to produce carefully. Secretary of Agriculture Henry Wallace proclaimed, "Nature treats the earth kindly. Man treats her harshly. He overplows the cropland, overgrazes the pastureland and overcuts the timberland. He destroys millions of acres completely. …This terribly destructive process is excusable in a young civilization. It is not excusable in the United States in the year 1938".[25]

This pronouncement of Agriculture Secretary reads as a historic moment, when growers were forced to face the repercussions of past missteps. It is true that the soil erosion problem was indeed coming to a head in the United States in the 1930s, not just in the desiccated Midwest, but also in well-watered Santa Cruz County. Yet records of the Extension Service and other agencies show that in Santa Cruz County, growers' attention to soil conservation was not without precedent. Indeed, the practices of federal SCS agents had much in common with the earlier work of Extension. Now operating under national directives, federal experts sought to share methods nationally identified as sustainable to local growers. Their advice came imbued with nationalist rhetoric about the growers' role as stewards of the land. The SCS's primary goal was to develop a "soil consciousness" among local growers. Its experts found fault in previously touted practices, including clean cultivation and square planting. Soil experts flagged such practices as detrimental to agricultural sustainability, perhaps correctly. Yet those practices did not indicate a *lack* of a soil consciousness among local growers, simply an evolving one.

In Santa Cruz County, the SCS focused its efforts in a local experiment station, the Corralitos Creek Conservation Demonstration Area, established in December of 1934. It was the thirty-second such station created in the country and the second in the state. Much like the Extension demonstration plots that preceded them, the demonstration

Soil Conservation Service, Collections at the Pajaro Valley Historical Association, Watsonville, Calif.

[25] United States Department of Agriculture, *Soils and Men: A Yearbook of Agriculture*, 1938, Washington DC 1938, p. iii.

area was set up, quite literally, to demonstrate (ostensibly) new practices. The project began with an erosion-control plan, crafted by SCS experts working with farmers to devise "a plan designed to restore the balance of nature which man had destroyed".[26] Those who owned land within the region were eligible for SCS help. These farmers became known as "cooperators". For those who opted to "cooperate", the SCS supplied tools, labor, and information. Landowners were then responsible for the upkeep of ditches, retention walls, and anything else built to help contain erosion. In the records of the SCS, we find the next chapter of local growers working with agro-experts to adjust cultivation practices as the limits of sustainability become apparent.

The McCain Property on Larkin Valley Road, just outside of Watsonville, offers one example of the SCS at work in Santa Cruz County. Located in the hilly region not far from the coast, this property had for some time been planted in at least 50 acres of apple orchards. Participants acknowledged it as "one of the first farms to be cultivated" in the area. After purchasing this property, McCain encountered severe erosion problems. Of the 50 acres of orchards, a majority had been planted on slopes of more than 25 per cent, and some on grades *as steep as 50 per cent*. Traditional practices of clean cultivation, previously considered ideal for a region with limited or seasonal rainfall, had led to the loss of most of the topsoil. This, in turn, resulted in a dramatic decline in soil fertility.[27] After charting the types of soil on the property, the SCS suggested a plan of attack to stem further damage. The orchard in question was put on a "continuous cover crop management program", using annuals rather than a permanent cover crop to address concerns of competing with crops for water. The SCS

[26] W.A. Rockie, "Soil and Water Conservation in the Pacific Northwest", Soil Conservation Service, USDA, Region 11. (United StatesGPO, 1936). Box 2, Folder 102.292 Technical Data Record Group 114, Records of the Natural Resources Conservation Service, Watsonville, Calif. Area Office, National Archives and Records Administration, San Bruno, Calif.

[27] "Corralitos Creek Project: An Acute Conservation Problem and its Economic Solution", Box 10, Folder 734.1 Farm Planning and Management, Watsonville Area Office,Record Group 114, Records of the Natural Resources Conservation Service, National Archives and Records Administration, San Bruno, Calif., p. 1.

suggested additional techniques to control growth of the cover crop. Following this program, McCain was not only able to curb erosion but also to save money. By breaking from traditional practices "formerly considered essential", he reported decreased time and money spent on harrowing and plowing.[28] McCain also attested that, though the harvest had not yet occurred, the projected yield would be "better than he expected the orchard would produce when he bought it".[29]As a result of the changes to his crop management program, the SCS figured a savings of $3.00 to $5.00 per acre in cultivation costs.[30]

The SCS saw its work at the McCain ranch as an attempt to salvage orchard land from what, in the 1930s, it saw as previous missteps in apple cultivation. At the same time, McCain's willing participation in the program reflects a grower culture in tune with long-term thinking about land stewardship, an ethic based on adjusting approaches that, over time, appeared detrimental to the stability of the industry and the land.

Despite McCain's reported satisfaction, the process of delivering SCS guidance was not altogether seamless. The federal government's vision of a simple process of diffusion-adoption using a national template of erosion control met its first stumbling block when it encountered the reality of local environmental diversity. A conservation survey was completed in August of 1936 to determine just what types of soils existed in the Corralitos project and to what degree they were erodible. Slope and land use were also taken into consideration. On the 41,234 acres of the Corralitos Demonstration Area,

[28] Ibid., p. 1. The work logs of the SCS show that McCain requested government assistance, in the form of construction of 200 linear feet of annual ditches, a 400 linear foot drainage way, 2100 linear feet of permanent diversion ditches (plus additional ditches for his woodland area) and willow checks in six of his fields. Improvements were put in place, with the help of the local government workers housed at the nearby Pinto Lake Camp (Pinto Lake housed a local contingent of young men employed by another New Deal program, the Civilian Conservation Corp.) See Soil Conservation Service, Ledgers of work requested in Corralitos Creek Demonstration Area, Collections at the Pajaro Valley Historical Association, Watsonville, Calif.

[29] Ibid., p. 1.

[30] Ibid., p. 1.

the survey identified sixty soil types. Each of these soils was meticulously mapped, noting its characteristics as well as its current use and health. The SCS's Area Conservationist in Watsonville, George W. Gosline, notified higher ups that local soil diversity would indeed make for a more complicated endeavor than originally expected.[31] Further, Gosline added a subtle but important distinction:

> Adequate erosion control cannot by obtained merely by an elaborate system of mechanical control structures. Proper land use is the first consideration, in the establishment of any erosion control program. In conditions where proper land use cannot be applied, the development of an effective farm conservation program is severely handicapped.[32]

The issue at hand was more complicated than fixing technique. Rather the problem rested on how the land was used in the first place. In other words, the SCS identified the problem as not how growers were managing their orchards, but that growers chose to plant orchards for commercial purposes on this particular topography, in this particular soil, at all. The SCS set out to rectify their most daunting nemesis: what they termed "improper cultural practices". The result was, in many cases, difficult advice to follow, especially in the midst of economic turmoil.

SCS employees seemed to suggest that the growers' misuse of the land was the essential problem. The partnership here between grower and expert found in the records of the SCS reads as somewhat didactic, with the federal government workers attempting to save locals from their erring ways. SCS experts criticized traditional local practices ranging from square planting and clean cultivation to gulching (sliding apple crates down the hillsides, down the straight rows between trees, as the most direct route to the road below). They argued that these traditions should be unseated. In some cases, they recommended that fields be taken out of cultivation, even at the risk of temporary

[31] George Gosline, letter to Charles W. Petit, Regional Conservator, SCS Berkeley, 4 October 1940, Box 10, Folder 734.1,Record Group 114, Records of the Natural Resources Conservation Service, Watsonville, Calif. Area Office, National Archives and Records Administration, San Bruno, Calif.

[32] Gosline, *Project Monograph* cit., p. 28.

drops in profit or productivity. In their reports, federal workers presented an SCS at odds with recalcitrant local growers, farmers imbued with a fierce localism and resistant to change or adjustment. Because participation in the demonstration project was completely voluntary, SCS files are soaked with elaborate courtship schemes, aimed at wooing what SCS agents perceived as the reluctant local farmer.[33]

Yet the "expected" stumbling block of a fierce agrarian independence never quite materialized. Rather, after much discussion of erosion issues in the previous decade, the county's own "erosion conscious farmers" had in fact pursued the idea of hosting such a demonstration project.[34] Indeed, the local newspaper reported on the SCS project

[33] SCS protocol stated that in no way should an agent of the SCS approach a farmer, or his property, unless requested to do so by that farmer. If they expressed interest in participating, the operator first joined a local Soil Conservation Association, through which they would request a survey. The request was then reviewed by the local SCS office, who then visited the farm in question to gauge the need for help and the willingness of the farmer to adopt the measures required. Then, according to SCS protocol, "if it appears that a conservation program is necessary on the farm, if the farmer is interested and desirous of establishing such a program, and if it will provide a demonstration in soil and water conservation, steps are taken to develop a farm conservation plan with the farmer". Only after this process would the SCS move forward, preparing an "erosion map" for the property, channeling the information gained through experts in soil, agronomy, and engineering employed by the local SCS office, and drawing up a final cooperation agreement with the farmer. The SCS insisted that all technical recommendations would be planned "in close consultation" with the farmer or operator. Only after the SCS had drawn up a "Plan of Conservation Operations", and the farmer had approved it, was the contract considered complete and further work could take place. The contract itself usually took the form of a five-year cooperative agreement, and upon signing the farmer officially became a "cooperator". Participation was a bilateral negotiation. See J.G. Bamesberger, Santa Paula office, to George Gosline, September 6, 1935. Box 1, Folder 113.1, Record Group 114,Records of the Natural Resources Conservation Service, Watsonville, Calif. Area Office, National Archives and Records Administration, San Bruno, California. Gosline, *Project Monograph* cit., pp. 23-25. C.M. Seibert, *Project Soil Conservationist*, Memo to Members of the Staff, 1937, Box 2, Folder 125, Record Group 114, Records of the Natural Resources Conservation Service, Watsonville Area Office, National Archives and Records Administration, San Bruno, California.

[34] "Farm Adviser Made Debut in 1917", in *Register Pajaro Development Edition* 16 April 1940, p. 1.

with an air of enthusiasm. Dependent on locals to participate in their demonstration project, the SCS was fortunate to find a practiced and willing community. Its talks were crowded with local growers in shirts and ties ready to work with federal experts to save their soil.

The only real stumbling block to SCS programmatic success was the socio-economic reality of the locality in question. SCS provided a plan, plus the initial labor and materials.[35] The long-range plan called for the farmers themselves to take over these improvements, once they understood their land and what it needed. Successfully turning these operations over to farmers depended on the ability of the SCS to teach what experts then deemed appropriate cultivation techniques, the federal government's construction of physical improvements, and – quite significantly – the farmers' ability to finance improvements and their willingness to continue in the program. According to SCS employees, there were "good" cooperators who backed and promoted the work of the SCS in their community. In addition to faithfully sticking to their own conservation plans, they were "great boosters" for the organization, submitting positive testimonials to the U.S. Department of Agriculture.[36] Those the SCS considered not so "good" were those who failed to maintain the SCS program established for them. The most frequent failures included keeping up ditches or replanting cover crops.[37]

In addition to the daunting cost of upkeep, the advice itself was sometimes harrowing. SCS suggestions often required that growers

[35] C.M. Seibert to Dr. Howard M. Johnston (local land owner), March 27, 1937. Box 2, Folder 125, Record Group 114, Records of the Natural Resources Conservation Service, Watsonville Area Office, National Archives and Records Administration, San Bruno, California.

[36] Dave Dresbach to George Gosline, April 27, 1939. Box 8, Folder 110.19, Record Group 114, Records of the Natural Resources Conservation Service, Watsonville Area Office, National Archives and Records Administration, San Bruno, California.

[37] C.W. Cleary, Jr., Asst. Regional Agronomist, to George Gosline, March 16, 1937, included in "Report on the Corralitos Project, February 1937", Box 2, Folder 102.8, Record Group 114, Records of the Natural Resources Conservation Service, Watsonville Area Office, National Archives and Records Administration, San Bruno, California.

take crops out of production, and wait as long as three years to replant, often with new crops and cultivation methods. The SCS duly admitted that some of the changes suggested for long-term benefit could translate into "added expenditures or curtailment of income for two or three years".[38] This advice ran counter to growers' ambition to make the land productive and profitable. Plus, the sting of financial sacrifice was acutely felt in the Corralitos project, beset by a confluence of ecological and economic difficulties. For the five years preceding the SCS's arrival in the valley, apple profits had been "well below normal".[39] What the SCS demanded flew in the face not only of tradition but of growers' need for economic survival. The economic and environmental aspects of sustainable practices do not always line up. The tensions growers felt in completing SCS programs again reveal growers adjusting, albeit with some degree of struggle, to the changing context of soil health and agricultural technology.

Despite the local challenges the SCS faced, the cooperators most-

[38] Gosline, *Project Monograph* cit., p. 77.

[39] A corollary issue of particular concern to the USDA was that of land ownership. The USDA cited tenancy as both a cause of soil neglect and a risk for project derailment. While tenancy was relatively low in Santa Cruz, it was a nation-wide concern for the USDA, and illustrates the gap between idealized expectations and reality in the fields. To ask tenants to work with demonstration project may ask them to face the burden of financial cuts that might result from temporarily taking crops out of cultivation, crop rotation, or any changes that might adversely affect the size of the harvest. In one case, tenants who had banked on the income from a strawberry crop resisted when told the methods of rotation necessitated strawberries being retired from that field for a period of up to ten years. Tenant farmers were solely dependent on the crops they harvested from season to season, to take care of their families and to pay their leases. Furthermore, their concerns were arguably not as tied to long-term sustainability for any given field because they were not permanently attached. This was suspected by the USDA. Socio-economic conditions thus represented a significant problem underlying a top-down approach to soil management. Who owned the land in question? If they were owner-operators (the ideal) could they afford the upkeep of the soil regimen? If they were absentee landlords were they invested in the long-term health of soil? If they were, could they be convinced not pass off the cost to their tenants (a noted problem), and provide incentives in the form of long-term leases to secure cooperation? Would those tenants be interested in long-term leases? Gosline, *Project Monograph* cit., p. 77.

ly cooperated. At least according to the local paper, the community felt that the presence of the demonstration project was a good thing. Many growers had visited the project, and the SCS had "played a prominent part in the economic and social life of the entire community". Once more, the community acknowledged the efforts of the SCS "in the endeavor to promote the continuing welfare of the land and those who till it".[40]

Ultimately, it seems the SCS's Corralitos Project heightened but did not create "erosion consciousness". In the late 30s, after the Civilian Conservation Camps had closed and the New Deal was fading from the Pajaro Valley, the U.S. Department of Agriculture proposed local "soil districts" as a means of coordinating and facilitating SCS advice. Growers in Santa Cruz County agreed. Once again, they incorporated a new model into their existing ethos of land management. In the Pajaro Valley and elsewhere, California growers organized themselves into soil districts, hoping collectively to address the health of the soil "commons". Two such districts opened in proximity to the Corralitos project. They signaled, once again, an agricultural community involved in an evolving erosion control program, independent of government tutelage. In 1940, California's Soil Conservation Commission acknowledged what local growers already knew: "the initiative for this type of activity should come from the farmers themselves".[41]

What remains: social equity and agricultural environmental history

The record of agricultural development in Santa Cruz County reveals a grower culture that has consistently remained as "stewards of the land" – traditional agrarians in some senses, with an eye towards stability in economy and environmental health. Their agrarian roots also show in a dedication to community stability. Then as

[40] Register-Pajaronian. April 16 1940, p. 6.

[41] State of California, *Report of the State Soil Conservation Commission for the years 1938-1944*, November 1994, p. 2.

now, agrarianism is more than agricultural production. It reflects a culture of intimacy between the land and its people.

The chapter of historical sustainability that remains to be explored is one that asks how social sustainability, characterized by an interest in social equity and justice, has evolved over time as part of the sustainability equation. While beyond the limits of this article, social sustainability is another compelling aspect of the story, one necessary to our understanding the evolution of agricultural communities in the 20th century as they embraced the changes of modern agriculture. In its broadest outlines, we want to understand how agricultural and social sustainability reflect, compete, and conflict with each other. We see this conflict most clearly in our increased dependence on a migratory labor force, notable in the United States generally and in California particular.

This migratory labor force emerged to harvest monocrop commercial operations, and it coincided with significant foreign immigration into the agricultural regions of the western US. Agriculture and agrarianism were cherished parts of American national identity well into the 19th century, and because of the American cultural attachment to its agrarian past, the agricultural industry became a scene of great racial and ethnic tension in terms of foreign participation. Indeed, traditional historical narratives of California agriculture paint a significant division in the fields between white Anglo-American landowners and foreign immigrant laborers from Asia, Eastern Europe, and later, Mexico. Recent research has complicated this strictly racial division, revealing a diverse population developing side industries, operating as tenant farmers, and even owning farms themselves. Adding a further complication, the 1930s introduced over a hundred thousand Anglo American migrants from points due east, who entered the fields as laborers and faced stringent discrimination based on their socio-economic status, regardless of race. If we are to understand the evolution of agricultural sustainability, then the social instability that results from virulent racism and fear of outsiders, as well as anti-labor activism, all beg our attention. We must see them as part of the process by which growers sought a sustainable agricultural industry over the course of the last century.

Examining this cultural history through the lens of sustainability promises some interesting reflections on the complexity of social conflict in the fields of California. Santa Cruz County presents some unexpected moments in its cultural past. During the Depression, white Anglo American growers created an unexpected alliance with growers of Japanese and Portuguese descent, with whom they joined to vilify and drive away white Anglo American strikers and to import foreign laborers. In the months leading up to Japanese interment in the Second World War, the local agricultural community defended local growers of Japanese heritage, despite having voted consistently in previous years to limit their rights to land ownership and tenancy. Perhaps better understanding growers' ideas about protecting the strength of their economy and the stability of their community – part and parcel of the modern definition of sustainability – can guide us these intricate and unexpected social dynamics. Much remains to be explored in pursuit of understanding the social aspect of sustainable agriculture and how it has evolved over time.

Conclusion

Sustainability is not a fixed point from which the United States, as an agriculturally productive society, once departed. Rather, sustainability is a moving target, an ideal towards which diverse agricultural communities have long strived, albeit guided by constantly shifting, and at times misinformed notions of ecologically, socially, and economically sustainable practices. In recent years, the U.S. Department of Agriculture has announced that its programs would aim to "balance goals of improved production and profitability, stewardship of the natural resource base and ecological systems, and enhancement of the vitality of rural communities".[42] Contemporary growers and consumers may understand this as a significant shift in the way we grow food in the United States – a move towards sustainable agriculture, defined by three basic tenets: the health of the land, the health of the industry, and the health of the community. Underneath this three-

[42] usda.gov, 2007.

tiered plan rest influential assumptions about the history of farming in the United States, specifically in California, and about the missteps taken by farmers past, which led to a need for drastic reform.

The apple industry in Santa Cruz County reveals that there was not a moment when growers rejected sustainable farming in favor of profits. Instead, we see a concept of sustainable agriculture that evolved over time, as agricultural communities navigated the technology and economic changes that came with the 20th century. As early 20th century growers embraced the new technologies of the modern era, they did not abandon the practices of the smaller, locally oriented and seemingly "more sustainable" 19th century. Rather they were navigating through a seminal change in their industry, and renegotiating how to maintain sustainable practices. Historicizing the concept of sustainability will allow proponents of sustainable agricultural practices today to understand that our current state of awareness is only as strong as our own historical context. As a society, we cannot help but evolve, along with our notions of good practice.