

**Comments Received on Regenerative Agriculture Definition\***  
**Comment Period: July 2024**

\*These are written comments received via email to [RegenerativeAg@cdfa.ca.gov](mailto:RegenerativeAg@cdfa.ca.gov) or through chat box via public listening sessions. Written comments submitted in the Zoom chat box during public listening sessions and work group sessions will be posted elsewhere. You may submit a written comment at any time to [RegenerativeAg@cdfa.ca.gov](mailto:RegenerativeAg@cdfa.ca.gov). Comments will be posted at the end of each month.

Date	Written Comment
7/7/24	<p>We're are a tipping point with regards to climate change and the decisions we make collectively as a species will impact the habitability of this planet over the next millennia.</p> <p>Broad adoption of regenerative farming practices around the globe can only have a positive impact on soil health, carbon sequestration, water tables and reversing biodiversity loss.</p> <p>Less than 1% of farms in the US are organic. If we restrict the definition of regenerative to organic first, then we are missing a critical opportunity for broad and rapid adoption of regenerative practices in farms around the world, something we desperately need. If regen becomes a niche within a tiny niche then our children and grandchildren will come to regret the decision we made.</p> <p>We need to convert the 99% of farmers to regen, that's our objective, so providing an entry point that is more widely accessible is the absolute key to getting farmers of all shapes and sizes started on the journey. We have witnessed first hand the interest this farming method elicits if correctly positioned and the vast majority of farmers once started will naturally progress towards organic practices as an evolution from regen. It would be an enormous shame to box this method into a tiny minority of farmers and make the burden of adopting these practices so onerous that a lot of people may never get started.</p> <p>We have a chance to reverse the damage we've done to this planet, let's not miss this opportunity.</p>

	<p>For the sake of all of us living on this planet (not just humans), <u>please do not define regenerative farming as being organic first</u> but instead allow all farmers the chance to transition to regenerative farming practices, from whatever starting point they're at.</p>
7/8/24	<p>As technical service providers, habitat specialists, research partners and advisors to growers and ranchers in nearly every county in California for over 20 years, the Xerces Society has a deep understanding of the goals and limitations for producers implementing regenerative practices on their farms. We recommend that CDFA include some frequently overlooked core principles of Regenerative Agriculture, such as the above ground biodiversity that is critical for resource stability. We also provide examples of specific practices that are proven to achieve multiple Regenerative Agriculture goals.</p> <p>California producers operate in deeply complex, challenging landscapes and regulatory environments. Therefore, CDFA's definition of Regenerative Agriculture should pave a clear and direct path towards stable, profitable production and long-term landscape resilience for decades and even centuries to come. Long term resource security will only be maintained when landowners and their collaborators invest in practices that reduce the need for synthetic and toxic inputs and act to reduce their contribution to climate change through carbon capture and regenerative soil nutrition programs. We agree with many commenters that these are critical aspects of the Regenerative Agriculture definition.</p> <p>Additionally, we encourage CDFA to view Regenerative Agriculture - which, when properly implemented, will result in landscape resilience and long term resource stability - through an Agroecosystem lens. To do this, CDFA must set criteria for practices that support the whole ecosystem in and around farms, without which production will not be stable and profitable. Supporting that farm ecosystem includes the well understood emphasis on soil health, soil biodiversity, water conservation and continued refinement of water use efficiency.</p> <p>However, the importance of creating and protecting on-farm biodiversity through diversifying plant species, fostering buffers and habitat areas, and implementing integrated pest and pollinator management (IPPM)</p>

programs that emphasize ecosystem-based control and prevention should not be overlooked. While crop diversity and crop rotations are excellent practices for some cropping systems, we also need to ensure that all Regenerative farmers create and/or maintain natural habitat encompassing and supporting native flora and fauna. Natural habitat can be improved through cover cropping and a reduction in tillage, but it also requires the intentional planting and maintenance of permanent habitat areas. Permanent habitat areas must include a diverse set of plant species that support domestic and wild pollinators, invertebrate natural enemies, and predatory birds, amphibians and reptiles.

Natural habitat and plant diversification can be achieved through specific practices recognized by most stakeholders including [NRCS](#) and [CDFA](#), such as hedgerows, riparian plantings, in-field insectary strips, field borders, tail-water pond plantings, and other buffers along sloughs, irrigation canals, and wetlands. The use of invasive species in this habitat must be prohibited, but many tame non-native species and native species are well documented to support excellent and effective natural habitat on farms. Many of these practices have multiple benefits that meet Regenerative Agriculture goals such as carbon sequestration, improved soil health and nutrient availability, and water resource stability. It is well known that cover crops increase organic matter and improve water holding capacity of soils. Hedgerows, insectary plantings, stream buffers and many others also contribute to reducing erosion, capturing and increasing organic matter and water infiltration, buffering fields from extreme winds and temperatures, and supporting pollinators and natural enemies.

Integrated Pest and Pollinator Management (IPPM) should also be considered a fundamental component of regenerative agriculture. Since pollinators and other beneficial insects play crucial roles in healthy agroecosystems, it is essential to consider their needs and exposure risks when making crop management decisions. Instead of exclusively relying on synthetic inputs to preemptively or reactively address pest outbreaks, an IPPM approach helps farmers control pests by balancing the functions of the agroecosystem. This improves the long-term resource stability of the farmland by creating more ecological resilience and reducing the dependence on carbon intensive inputs. Specific IPPM strategies such as carefully planned crop rotations, adjusting irrigation practices, selecting optimal planting and harvesting times, incorporating plants focused on attracting predatory insects, utilizing trap plants, and implementing

	<p>proactive sanitation measures, can reduce pests and diseases without relying on chemical inputs. By prioritizing practices that protect pollinators and beneficial insects, farmers can enhance their permanent populations of pollinators and beneficial insects, which builds in natural regeneration of their agroecosystem.</p> <p>Xerces Society strongly encourages CDFA to include specific practices that support consistent and permanent natural habitat in the regenerative farm landscape, promote the use of IPPM practices, and contribute to the long-term landscape and resource stability in their definition and criteria for Regenerative Agriculture.</p>
7/10/24	<p>As the first organic herbal tea company, founded in California 50 years ago, Traditional Medicinals welcomes the opportunity to provide input to the Task Force. We thank the CDFA for initiating a task force as definitions can hold significant power and influence.</p> <p>It is our position that a statewide definition of regenerative agriculture should begin with certified organic.</p> <p>CDFA did well to consult the Environmental Farming Act Science Advisory Panel (EFA/SAP), and the framework that EFA/SAP provided is commendable. It demonstrates ambition, broad applicability, outcome orientation, and a commitment to accountability. The globally-recognized National Organic Program supports every pillar within the recommended framework, and is therefore an ideal starting point for the state of California.</p> <p>As the Department seeks to serve the best interests of farmers, ranchers, and land stewards, we urge you to consider the adoption of organic as the foundation for California's regenerative agriculture definition. There are several compelling reasons for this stance:</p> <ol style="list-style-type: none"> <li>1. <b>Proven Track Record:</b> Organic agriculture has a documented history of improving environments and economies, supported by over three decades of research and evidence based studies.</li> </ol>

	<ol style="list-style-type: none"> <li>2. <b>Efficiency:</b> Utilizing an established standard like organic eliminates duplicative policy creation efforts while still allowing for continuous improvement.</li> <li>3. <b>Applicability:</b> Organic practices are increasingly accessible, and can easily be adapted to fit all operations, including non-productive-land-management.</li> <li>4. <b>Clarity:</b> Basing the state definition on a well-known and well-understood term like organic reduces confusion within the marketplace among farmers, consumers, and industry stakeholders.</li> <li>5. <b>Alignment with State Goals:</b> Organic represents a significant departure from conventional agriculture towards verifiable regenerative outcomes.</li> </ol> <p>California is the leading food-producing state in the US, with the largest proportion of organic farmland. Organic food production is the fastest growing sector in the food industry. Organic means fewer synthetic chemicals, less pesticides, more pollinators, safer groundwater, carbon sequestration, safer working conditions for workers in the field, and increased biomass in the soil. Organic food is higher in vitamins and minerals, and organic operations demonstrate more resilience in the face of extreme weather events.</p> <p>The proposed definition as provided during the 5<sup>th</sup> listening session brings no further clarity and does not fully answer the EFA/SAP’s framework. According to the framework, among other things, a definition should define goals and outcomes, guard against greenwashing, consider anonymity and privacy, and lead to positive impacts on California’s environmental, social, human health, economic and climate goals. The proposed definition lacks any of those points.</p> <p>We implore the state to listen to the overwhelming chorus of voices at the listening sessions and in the submitted comments, recognize that the tools to achieve the state’s goals are already within reach, take a firm position against greenwashing, make a definition worthy of the nation’s leading food production state, and include organic as a foundational component for the California Regenerative definition.</p>
7/17/24	<p><u>Background:</u>  The California Sustainable Winegrowing Alliance (CSWA) has supported the adoption of sustainable winegrowing practices in vineyards and wineries for over 20 years. While regenerative agriculture is not</p>

new, there is increased interest in the approach by retailers, trade, consumers and media who increasingly ask CSWA's certified sustainable vineyards and wineries if they are "regenerative" or if they use regenerative practices. In addition, the California Department of Food and Agriculture (CDFA) is undergoing the development of a regenerative agriculture definition in response to increased use of the term in California policies and programs. With this growing interest in regenerative agriculture and, currently, the lack of a single regenerative agriculture definition or standard, CSWA conducted an extensive review of peer-reviewed literature and regenerative agriculture programs and standards. The following list of regenerative winegrowing principles and examples of practices was developed to help winegrape growers better understand and communicate about the relationship between sustainable and regenerative winegrowing and to share with CDFA during their public comment period on their draft definition. Once CDFA finalizes its definition, it will be incorporated into this document.

Regenerative Winegrowing Principles and Practices:

CSWA considers regenerative winegrowing to include the following principles, which are aligned with sustainable winegrowing:

- Regenerative winegrowing is a holistic, place-based systems approach that acknowledges individual needs of different vineyards, based on size, scale, location, property history, ecosystems, etc.
- A regenerative farming approach includes both practices and outcomes. Practices provide clarity to growers for implementation, but practices are not one-size-fits all. Since regenerative outcomes can be achieved with a different set of practices depending on the local context of a vineyard, measuring and tracking outcomes is also important.
- Regenerative winegrowing enhances not only the environmental, but also the social and economic dimensions of sustainable winegrape production.

CSWA believes that regenerative practices are part of a comprehensive sustainable winegrowing approach and contribute to a healthier environment, stronger communities, high quality grapes and wine and vibrant businesses.

- Examples of regenerative winegrowing topic areas include soil health, water use efficiency and quality, ecosystem management and biodiversity, climate action and social impact (see table below for examples of outcomes and practices).

Examples of Regenerative Winegrowing Outcomes and Practices:

The following examples of regenerative winegrowing outcomes and practices were derived from review of multiple regenerative programs with relevance to winegrapes - see references at the end of this document. These practices are also found in sustainable winegrowing programs.

<b>Topic Area</b>	<b>Outcomes</b>	<b>Example Practices*</b>
<b>Soil Health</b>	Improve soil health Reduce soil erosion Increase soil organic matter	Reduce tillage Protect and cover soil Use cover crops Use compost or mulch Reduce use of herbicides Soil testing and analysis Integrate livestock
<b>Water</b>	Optimize water use efficiency Improve water quality	Irrigation efficiency Distribution uniformity testing Wastewater treatment Establish riparian buffer strips
<b>Biodiversity</b>	Increase biodiversity Protect and enhance habitat	Incorporate trees, hedgerows and windbreaks Riparian buffer planting Conserve and restore natural habitats Minimize pesticide use Use natural pest control

<b>Climate</b>	Reduce greenhouse gas emissions Increase carbon sequestration	Minimize synthetic fertilizer use Conduct equipment energy audits Improve energy efficiency Upgrade and replace old pumps Use renewable energy
<b>Social</b>	Increase health and wellbeing for workers Increase farm profitability/farmer livelihood Improve social wellbeing of communities	Practices to improve and/or protect worker health and safety Responsible labor practices Contribute to local community

\*Some practices contribute to positive outcomes in multiple topic areas but are only listed once for brevity.

Regenerative Winegrowing Key Concepts:

**Regenerative Winegrowing is Part of Sustainable Winegrowing**

For CSWA's winegrower participants and those familiar with CSWA's educational and certification programs, the above list of practices and outcomes will look familiar. The majority of these practices and outcomes can be found in the California Code of Sustainable Winegrowing, as well as many other U.S.-based and international sustainable winegrowing standards, although adoption of specific practices and/or measurement of performance outcomes will differ by vineyard. Sustainable winegrowing educational and certification programs and regenerative winegrowing programs and initiatives share common goals: to restore the land and our natural resources to better health and enhance relationships with employees and neighbors. Many regenerative practices are broadly embraced and practiced by winegrowers that have been involved in sustainability for the past several decades.

**A Common Mission: Sustainable, Organic, Biodynamic and Regenerative**



CSWA views sustainable, organic, biodynamic and regenerative approaches adopted in the wine community as contributing to the common mission of leaving the land and people better than it was previously. All of these farming approaches, regardless of which an individual winegrape grower follows, lead to higher quality winegrapes and wine and to a healthier environment and wine community.

### **Communicating about Regenerative Winegrowing**

Winegrowers can reference the above list of practices and outcomes to better understand if they are implementing regenerative winegrowing practices. If planning to communicate about regenerative winegrowing, it is important to share specific examples of regenerative practices and outcomes to be accurate and truthful in messaging.

#### Frequently Asked Questions:

**Q.** Does regenerative winegrowing require organic as a baseline?

**A.** While some regenerative agriculture definitions and programs, such as Regenerative Organic Certified, include a foundation of organic practices, there are many more that do not consider organic as a requirement for practicing regenerative agriculture. Organic practices can play a part in regenerative winegrowing; however, it is not a prerequisite to using practices that build soil health, improve water quality, increase biodiversity and sequester carbon. Therefore, CSWA does not believe regenerative winegrowing requires organic as a baseline. CSWA is consistent with other sustainable agriculture programs and certifications, which allows for the use of targeted, low-risk crop protection materials only when deemed necessary and when used as part of an Integrated Pest Management strategy.

**Q.** Doesn't sustainability, by the nature of the word, focus on "sustaining" environmental quality and not regenerating it?

**A.** Sustainable winegrowing has always been more than "sustaining" soil and water quality, ecosystem health, etc. Sustainable winegrowing has long focused on enhancing and rebuilding the resources that vineyards depend on to grow high quality grapes, and making the land, business and relationships better than winegrowers found it. "A sustainable agriculture is one that, over the long term, enhances environmental quality and the resource base on which agriculture depends; provides for basic human food

	<p>and fiber needs; is economically viable; and enhances the quality of life for farmers and society as a whole.” – American Agronomy Society, 1989. Sustainable winegrowing is a continuum and most certification programs require annual assessment of practices and demonstration of continuous improvement.</p> <p><b>Q.</b> Why does regenerative and sustainable winegrowing need to include outcomes and not just practices?  <b>A.</b> Depending on the individual vineyard, a different set of practices may be needed to reach a desired outcome. For instance, while practices such as cover crops, applied compost and reduced tillage can lead to improved soil health, any combination of these may be needed for a specific vineyard. By tracking outcomes through soil testing and use of soil health indicators, a grower can ensure that the set of practices they used led to increased soil health.</p>
7/22/24	<p>Regenerative Agriculture excludes any production system where the following issues are present:</p> <p>Soil fertility based on synthetic nitrogenous fertilizers.  Frequent cultivation tillage in field crops and bare soil in orchard and vineyards. Little or no crop rotations or cover cropping. Pest management based on highly toxic materials that have the potential to move off target.  Pest management that is not based in an Integrated Pest Management approach. Irrigation practices that ignore natural water cycles, deplete aquifers, create salinity impaired soil and cause water quality concerns.  Irrigated crops that rely on interbasin water transfers, especially if the end commodity is consumed outside of either basin.  Where there is no systems approach to including and enhancing biodiversity above and below soil.  Production systems that depend in some degree on a work force that lacks legal status. Crops where the scientific consequences agree that the processed form that it is consumed is toxic to humans. Such as alcoholic products and most likely, cannabis.</p> <p>To define what is regenerative agriculture will take a great deal of consensus building to create an actual definition. An after a definition is agreed upon it will take a tremendous amount of science to develop biological based production methods that build soil, sequesters carbon, and rebuilds other ecosystem services. Multi-national food companies and consumers are willing to spend extra money to support</p>

	<p>regenerative agriculture. Governments are willing to spend public money to support regenerative agriculture. And markets are being formed for various schemes to support regenerative agriculture. All these efforts should be based on a definition of regenerative agriculture that is regenerative to the earth and biodiversity.</p>
--	---