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## **Farmers offer climate change solutions**

Leigh Sharp 12 hrs ago

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Ask anyone what the Napa Valley is famous for, and a likely answer is wine. Less well known is the vital role that our soil plays in helping address one of farming's biggest challenges, the impacts of a changing climate.

Scientists predict that in the years to come, as temperatures fluctuate, California will experience more weather extremes — droughts, heat waves, wildfires and floods that will put a huge strain on our community and on agriculture. In many cases, farmers and ranchers are among the first to experience the effects of climate change, including erratic weather that affects bud break, pasture quality, pest pressure, water availability and timing, crop quality and yields, and worker safety due to heat waves.

California's farms and ranches contribute about 8 percent of the state's greenhouse gas emissions that cause climate change. The agricultural industry produces two potent greenhouse gases, methane (mainly from livestock) and nitrous oxide (from fertilizers), as well as the ubiquitous carbon dioxide from fossil fuel-powered equipment and pumps. Farmers can reduce emissions in a number of ways: reduce tractor passes and tillage, decrease or eliminate the use of synthetic nitrogen fertilizers, improve water use efficiency so less energy is required to pump it, produce on-farm renewable energy, compost manure, and more.

There's more good news: land management practices on farms and rangelands that build soil health can draw carbon dioxide from the air, where it causes climate change, and store it in soil, vines and trees, where carbon is needed as a building block of life.

Compost, cover crops, reduced tillage and crop rotations can all build soil's ability to absorb carbon dioxide from the air. Grazing management strategies also can improve soil health and forage quantity. Conservation planting of hedgerows and other buffers

adjacent to rivers and streams stores carbon in the woody plants. Many of these practices also provide additional environmental and health benefits both on and off the farm, such as improved air quality, habitat for pollinators and wildlife, water quality and flood control.

The Napa County Resource Conservation District implements several programs related to increasing local resiliency to the effects of changing climate. We are working with leading experts from UC Davis to explore a variety of vineyard floor management practices to build soil health and sequester carbon. We are working with the Natural Resources Conservation Service to build tools to quantify carbon sequestration that results from conservation and restoration practices. We are engaging our entire community in an initiative to plant 5,000 oaks in a three-year period. We are offering technical assistance and conservation planning in conjunction with NRCS and other RCD's in our region through the LandSmart program.

The state of California has several funding programs to encourage the use of agricultural climate solutions to help growers implement better practices, including the state's Greenhouse Gas Reduction Fund, with yet-to-be-determined allocations for about \$3 billion in cap-and-trade auction revenues in the coming year. These funds, by law, must fund voluntary projects that reduce emissions and/or sequester carbon. If funded, a new program called the Healthy Soils Initiative could be an important source of financial and technical incentives for producers interested in soil building.

Climate change is a topic that is often gloomy and overwhelming. However, provided with adequate resources, farmers in Napa County and all across California have powerful solutions to offer, along with the opportunity to make a lasting contribution to our agricultural heritage.

**Leigh Sharp, Executive Director**

**Napa County Resource Conservation District**