

Summary of “Prohibition on Concentrated Animal Feeding Operations” Supporting Arguments

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Executive Summary

This document details the accuracies, relevance, and/or implication of the WHEREAS statements in the proposed ballot initiative. This initiative uses the term Concentrated Animal Feeding Operation (CAFO) to distinguish the size (small, medium, large) of different animal operations in Sonoma County. The term CAFO is used to regulate animal operations by the EPA or a designated authority (California Water Quality Control Board) per the Clean Water Act. Sonoma County dairies are permitted under the designated authority and lawfully regulated. The term CAFO has no indication of animal welfare/care, greenhouse gas emissions, or management and simply classifies operations on potential water quality risks to ensure prevention.

Sonoma County dairies and poultry facilities implement animal care standards, either through those required by the National Organic Program or through third-party welfare certification programs. One hundred percent of dairies managing 200 or more cows (medium and large size per CAFO index) implement one or more of these tools. Additionally, proposition 12 is a voter driven initiative requiring space minimums for egg-laying hens, veal, and breeding hog operations. Those operations regulated under this law in Sonoma County retain Distributor Registrations and comply with the law. Humane handling and disease prevention directly help achieve the ethical and financial goals of farmers.

Lands managed by dairies, either through grazing or farming, sequester 22,768 MTCO₂e more than if they were not managed. This active management provides ideal viewsheds in Sonoma County that may increase property values. Dairies in Sonoma County provide important ecosystem services, sequestering atmospheric carbon and providing locally sourced, organic dairy products to the community. Removing locally produced products would require products to be sourced from outside the community and reduce active management and carbon sequestration on working lands, increasing the carbon footprint of food acquisition for all Sonoma County residents. This will likely impact food cost for all socioeconomic statuses, as well.

Limitations: The author of this summary specializes in dairy science and therefore offers a more complete analysis through a dairy impact lens. This does not indicate that poultry operations do not employ the same management strategies and care as dairy operations; it simply means that the author does not have the same amount of information and expertise to make data driven statements.

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Summary of Sonoma County Dairy Industry

Sonoma County houses 50 dairies, 84% being certified organic, milking an average of 350 cows. Those 42 organic dairies represent 40.82% of the state's certified organic dairies and 40.77% of the state's certified organic mature dairy cattle ([Organic Integrity Database](#)). Collectively, the county produces 42.4 million gallons of milk annually, valued at \$114 million. In 2022, 2.8 million pounds of organic milk were sold. Sonoma County produced 364.7 million pounds, or 13% of the national volume of organic milk. Dairies sell milk directly to a processor or milk broker, participate in a milk cooperative, or produce farmstead milk products. Dairies currently graze over 45,000 acres and farm over 8,100 acres, managing over 53,000 acres of land. Dairies employ approximately 320 Sonoma County residents and house over 640 people (employees plus family members).

Acronyms

AFO	Animal Feeding Operation
AMMP	Alternative Manure Management Program
CAF	Confined Animal Facility
CAFO	Concentrated Animal Feeding Operation
CARB	California Air Resources Board
CCI	California Climate Investments
CDC	Centers for Disease Control and Prevention
CDFA	California Department of Food and Agriculture
CO ₂	Carbon Dioxide
DDRDP	Dairy Digester Research and Development Program
EPA	Environmental Protection Agency
GHG	Greenhouse Gas
MTCO _{2e}	Metric Ton of Carbon Dioxide Equivalent
NAHMS	National Animal Health Monitoring System
NMP	Nutrient Management Plan
NOP	National Organic Program
NPDES	National Pollutant Discharge Elimination System
OEFI	Office of Environmental Farming and Innovation
UCCE	University of California Cooperative Extension
USDA	United States Department of Agriculture
USGS	United States Geological Survey

WHEREAS Summaries

WHEREAS, the people of Sonoma County value healthy communities and a healthy environment; and

WHEREAS, the people of Sonoma County value the humane treatment of animals; and

UCCE response:

- Caring for and managing animals requires proactive management to prevent illness and attention to detail to detect early signs of illness when it occurs. Healthy and well cared for animals produce more meat, fiber, milk, and eggs. When animals become sick or experience stress, their bodies shift energy from production to maintenance, aiding in the body's response to deal with the stress. Therefore, prevention of illness, clean housing, nutritious diets, and low-stress handling and environments are the basis for best management practices. Inhumane handling and poor management conflict with the goals of all farmers and ranchers, both ethically and financially.

WHEREAS, the U.S. Supreme Court upheld California's Proposition 12 (the Farm Animal Confinement Initiative), the nation's strongest farm animal welfare law [1], which was supported by 61.6% of Sonoma County voters [2]; and

Citations:

[1] https://www.supremecourt.gov/opinions/22pdf/21-468_5if6.pdf

- State
 - California Proposition 12 litigation by National Pork Producers for Prop 12 from US Supreme Court. The law was upheld.

[2] <https://sonomacounty.ca.gov/administrative-support-and-fiscal-services/clerk-recorder-assessor-registrar-of-voters/registrar-of-voters/elections/november-6-2018-general-election-final-results>

- County/State
 - Sonoma County voter results regarding Prop 12 on the ballot on November 6, 2018

UCCE response:

- Proposition 12, the Farm Animal Confinement Initiative, requires animals housed in confinement systems be managed with a minimum amount of space, allowing for freedom of movement, and be housed with cage-free designs (egg-laying hens). This proposition applies to veal calves, breeding pigs, and egg-laying hens. These confinement standards went into effect for veal calves on January 1, 2020, for egg-laying hens and breeding pigs on January 1, 2022, and for products produced outside California but sold in state on September 1, 2022. Egg, veal, and pork producers must have undergone a third-party certification of standards and retain a certificate of compliance by January 1, 2024. Operations not meeting standards in Proposition 12 will no longer retain an Egg, Veal, or Pork Distributor Registration, a registration required for the sale of these products in California. Those operations regulated under this law in Sonoma County retain Distributor Registrations and comply with the law. ([CDFA Animal Care Program](#))

WHEREAS, hundreds of Concentrated Animal Feeding Operations (CAFOs) presently operate in California [3], including over a dozen in Sonoma County; and
WHEREAS, millions of animals are confined in CAFOs across California [4]; and

Citations:

[3] <https://www3.epa.gov/npdes/pubs/region9.pdf>

- National
 - EPA definitions and regulation of AFOs and CAFOs.
 - “Based on information provided to EPA by USDA, there are 1,090 AFOs with 300 to 1,000 animal units and 1,030 AFOs with more than 1,000 animal units in California. These are primarily in the dairy sector (USDA, 1999; USDA, 2000). Currently, fewer than 500 dairies are covered by NPDES permits in the state. Another 1,800 dairies are regulated through local voluntary efforts or informal requirements (Cantu, 2000).”
 - “California’s waste discharge permitting program has been approved as a NPDES program in compliance with the Clean Water Act. Unlike federal law, the state does not apply different regulatory requirements based on herd size. To regulate dairies, the state of California uses a three-tier program that includes both voluntary compliance and regulations (Martinson, 2000).”
 - This document was published in May 2002.

[4] <https://www3.epa.gov/npdes/pubs/region9.pdf>

- Repeat of [3]

UCCE response:

- Both AFO (Animal Feeding Operation) and CAFO (Concentrated Animal Feeding Operation) are terms developed by the EPA Clean Water Act to assist in identifying and preventing pollution risks to US waterways. These terms classify operations on easily quantifiable parameters to assess potential water pollution risk and have no indication of animal welfare, care, or management. When identified as a CAFO, operations are required to implement best management practices and monitor water quality to prevent pollution. The Clean Water Act prohibits anyone from discharging pollutants into US waterways and operations with the CAFO designation are required to ensure that their operation safeguards water quality and human health ([EPA](#)).
- What is a CAFO? Animal operations must first be identified as an AFO. AFOs are animal production operations that bring animals into a confined area not used for grazing for 45 days or more annually. For many operations, this may be a barn or an open lot with a feeding area. An operation is then classified as a CAFO based on herd or flock size (see chart below in Table 18-0) and the method of discharge of point source pollutants. This method is either “a manmade ditch or pipe that carries manure or wastewater to a surface water or the animals come into contact with surface water that passes through the area they’re confined” ([EPA](#)). These methods of discharge are called point source pollutants and requires that the operation obtain a special permit called a National Pollutant Discharge Elimination System (NPDES) permit ([EPA](#)).
 - Point source: “any discernible, confined and discrete conveyance of pollutants, such as a pipe, ditch, channel, tunnel, conduit, discrete fissure, or container”.

- Pollutant: “any type of industrial, municipal, and agricultural waste discharged into water”. For animal agriculture, this might include manure, litter, and process wastewater.
- Dairies in Sonoma County are not considered point source polluters and are regulated by the North Coast ([Region 1](#)) and San Francisco Bay ([Region 2](#)) Water Quality Control Boards as non-point source polluters and do not require an NPDES permit. This difference in source does not mean they pollute. Regulations prohibits pollution, requiring dairies meet water quality standards. Dairies employ management practices which prevent pollution and do not require EPA regulation.
 - Region 1: “Large concentrated animal feeding operations (CAFO), as defined by federal regulations, include dairies with 700 or more mature dairy cows. Dairies defined as large CAFOs that discharge stormwater from cropland where manure, litter, or process wastewater has been applied must be implementing a Nutrient Management Plan upon enrollment under this Order. Such discharges can qualify as “agricultural stormwater discharges,” not subject to NPDES permitting, if manure and wastewater are applied to the land in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater (40 CFR section 122.23(e)). Large CAFOs that discharge such stormwater without an NMP are in violation of the federal Clean Water Act (CWA) and may be fined for the discharge and/or required to enroll under an NPDES permit. This Order does not authorize discharges to surface water that would otherwise require an NPDES permit. Dairies that have a discharge requiring an NPDES permit must obtain coverage under NPDES Permit for Concentrated Animal Feeding Operations Within the North Coast Region, Order No. R1-2012- 0001, or a subsequently adopted NPDES permit. Medium Animal Feeding Operations (AFOs) (200-699 mature dairy cows) and small AFOs (less than 200 mature dairy cows) may be designated as CAFOs by the Regional Water Board if the dairy discharges waste to waters of the United States. Such designated CAFOs would then be required to develop an NMP and apply for coverage under a NPDES permit. A CAFO means an AFO which is defined as a Large CAFO or Medium CAFO by 40 CFR §§ 122.23 (4) and (6), or that is designated as a CAFO by the United States Environmental Protection Agency (USEPA) or the Regional Water Board.”
 - Region 2: “Dischargers who discharge or propose to discharge pollutants to the waters of the United States are required to obtain coverage under a National Pollutant Discharge Elimination System (NPDES) permit and are not required to seek coverage under this Order. CAFs that are defined by federal regulations as a large concentrated animal feeding operation (CAFO) must separately address any stormwater-related discharges from land application areas. Such discharges can qualify as “agricultural stormwater discharges,” not subject to NPDES permitting, if manure and wastewater are applied to the land in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater (40 CFR section 122.23(e)).”
- These agencies regulate water quality through a General Waste Discharge Requirements Order ([R1-2019-001](#) or [R2-2016-0031](#)). Within these orders, dairies are required to meet

specific water quality metrics, achieved through application of best management practices identified in their nutrient management plans, and monitored through water sampling. Dairies participate in a third-party water monitoring program, which tests water during the winter season after storm events for various indicators of manure discharge. Thresholds of discharge are set for drinking water and aquatic life standards to ensure clean and safe water. Within the orders, dairies also develop water quality, riparian management, and nutrient management plans which aid dairy producers in ensuring they do not pollute.

- **Note:** The EPA and State Water Resources Control Board use a similar term to regulate animal operations. The EPA uses the term Concentrated Animal Feeding Operation (CAFO), which classifies operations as small, medium, or large based on days confined (45+ days, non-sequentially), mature herd size, and method of discharge. The State Water Resources Control Board uses the term Confined Animal Facility (CAF), which identifies operations that confine animals one or more days and collect solid and liquid manure. These terms are not synonymous.
- Total herds in California have dropped 60% from 2002 to 2022 (2,793 herds vs. 1,117 herds, respectively). These declines have been across all herd sizes from 2002 to 2022 (1-199 cows: 1,213 vs. 315 herds; 200 – 499 cows: 505 vs. 79 herds; 500+ cows: 1,075 vs. 723 herds) ([US Ag Census](#)). Seventy-two percent (72%) of Sonoma County dairies manage less than 500 cows, the sectors most declined over the past 22 years.

WHEREAS, it is a well-established scientific fact, as supported by thousands of studies exploring animal cognition, that animals have emotions, personalities, and the ability to feel pain, fear, and stress [5]; and

Citations:

[5] <https://www.livescience.com/39481-time-to-declare-animal-sentience.html>

- Global
 - Op-ed on animal sentience. While the writing is an opinion piece, much of the cited literature is from peer-reviewed ethological (animal behavior) studies.

UCCE response:

- UCCE does not dispute the reality of animal sentience.
- Production animals have emotions, termed affective states, which can be positive or negative. Positive affective states can be associated with play behaviors, mutual grooming, preening (feather cleaning), or other eustress (positive stress) events. Negative affective states can be associated with illness, injury, predation, and other distress (negative stress) events. Just like with humans, the life of production animals deals a variety of positive and negative situations. On occasion, a short-term negative event for an animal can benefit long-term overall welfare. For example, a short period of stress to vaccinate a cow (negative affective state from fear and pain) reduces her risk of contracting a disease (reduces negative affective state from disease which would cause reduced biological function, pain, and inability to express natural behavior due to illness).
- Often human ideals can be contrary to animal welfare. For example, consumers often assume cows prefer to be outdoors compared to indoors inside a barn. However, this fails to recognize cow preference, where indoors are preferred during hot and humid days

when the weather may cause stress ([Legrand et al., 2009](#)). In addition to extreme climate, barns offer protection from predation and offer a space to provide a complete and balanced diet. Each of these external factors (climate, predators, nutritional offerings, etc.) impact overall welfare. Due to these variables, animal management cannot be considered a “cookie-cutter” template and must be dynamic and adapt to the external realities of the system. This means keeping cows indoors when the weather and nutritional composition of pastures do not holistically support cow welfare. Using scientific evidence from animal behavior and preference studies to determine standards for animal care is more animal-centric than forcing human ideals and comforts on animals which may not benefit from those standards.

WHEREAS, every day, animals are treated inhumanely at CAFOs [6]; and
WHEREAS, the treatment of animals in CAFOs routinely violates California animal cruelty laws, with little to no accountability; and

Citations:

[6] <https://www.centerforfoodsafety.org/issues/307/animal-factories/animal-factories-and-animal-welfare>

- National
 - A discussion on “animal factories” (using this undefined term in place of CAFO) and food safety with no scientific citations other than one USDA statistic. The webpage references percentages of animals raised on CAFOs; however, the USDA numbers referenced only indicate farm and animal numbers raised within different herd/flock sizes and not whether those operations are regulated as CAFOs nor the management and welfare standards of the operations. Center for Food Safety is an environmentalist non-profit with a lobbying arm.

UCCE response:

- As previously stated, CAFO designates only the herd or flock size and method of point source pollution. This classification has no indication on animal welfare, space offerings, pasture access, veterinary care, or overall health and well-being of animals managed on the farm. It is strictly associated with risks to water quality.
- California currently regulates animal welfare legally through Proposition 12, which expanded on Proposition 2. As previously stated, farmers and ranchers regulated by these laws had to retain Certificates of Compliance by January 1, 2024, and those operations in Sonoma County are registered to sale products due to their compliance with the law.
- California Penal Code 597 also places legal restrictions on animal abuse and cruelty. As previously noted, animal abuse and cruelty conflicts with the ethical and financial goals of raising farm animals. ([CA Legislative Information](#)).
- All organic dairies must meet National Organic Program (NOP) animal care standards to ensure animal welfare ([Federal Register](#)). Further, 82% of all dairies over 200 cows undergo welfare certifications by third-party auditing. These welfare certifications, often developed using standards of care expected by consumers and animal welfare research studies, dictate certain criteria for animal management. This includes management involving calf care, cow nutrition, animal handling, and sick and injured animal treatment. For more information on standards commonly used in Sonoma County, visit

[American Humane Certified](#) and [Validus](#). Therefore, 100% of dairies with 200 or more cows address animal welfare through NOP standards and/or third-party animal welfare auditing.

WHEREAS, CAFOs have severe negative public health and environmental impacts due to the large amounts of concentrated, potentially toxic waste they produce and the infectious diseases they facilitate and harbor [7]; and

Citations:

[7] https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf

- National
 - White paper written for local boards of health on CAFO impact on communities. Published by National Association of Local Boards of Health (not a CDC document). The document identifies manure as most pressing health issue stemming from CAFOs due to the lack of land to spread the manure on. They note this may impact ground and surface waters.

UCCE response:

- Water quality impacts from Sonoma County dairies are highly regulated by the Regional Water Quality Control Board, as noted above.
- Sonoma County dairies manage an average of 3.2 acres per mature dairy cow.
- Toxic waste, or hazardous waste, is defined as waste material capable of causing death or injury. These wastes exist in numerous industries and include household items, such as batteries, drain cleaner, and furniture polish. Hazardous wastes that are ignitable, reactive, corrosive, or toxic are regulated by the EPA, though household wastes are excluded if used for regular household activities. Human wastes are also a regulated hazardous waste that must be treated and used. ([EPA](#))
- Animal waste systems work very similarly to human waste systems. In a home or business, when the toilet is flushed, wastes travel through pipes and sewers to eventually end up in a wastewater treatment plant. From there, solids are removed from the liquid portion, and both receive additional treatments allowing the material to be used for fertilizer (solids) or irrigation and hydropower (liquids). ([City of Santa Rosa](#))
- On a dairy, manure is moved to a manure pond two to four times daily. These ponds are engineered and regulated to ensure enough capacity for a 100-year peak storm flow (a storm of magnitude that has a 1% chance of happening any year; [USGS](#)). Depending on the management, solids may be removed from the liquid portion and either stored or composted. Then, during the fall when the ground has been seeded for new grasses and crops, liquids and solids are applied to deliver essential nutrients to the plants. Both must be applied at least 100 feet from surface water, well heads, sinkholes, or other conduits to surface waters unless 35 feet of vegetative buffer exists. ([Regional Water Quality Control Board](#))
- A vegetative buffer is an area of dense growth (shrubs, trees, grasses, perennials, etc.) which slows, captures, and filters water and runoff. They stop nutrients, sediments, and other pollutants from entering the waterways. ([EPA](#))
- California developed the [CalEnviroScreen 4.0](#), which places different census tracts in a percentile of pollution burden and population characteristics. These classifications are

defined as exposures from different air contaminants, environmental effects, sensitive populations, and socioeconomic factors. Sonoma County averages 25.1 of 100 on a pollution burden percentile and 29.1 of 100 on population characteristics percentile.

- For comparison, Marin County, a county with similar agricultural practices to Sonoma County, averages 22.9 of 100 on a pollution burden percentile and 14.7 of 100 on population characteristics percentile. Alameda County, a Bay Area county with limited animal production, averages 37.2 of 100 on a pollution burden percentile and 45.7 of 100 on population characteristics percentile. Tulare County, a predominately agricultural county, averages 71.2 of 100 on a pollution burden percentile and 72.4 of 100 on population characteristics percentile.

WHEREAS, investigators have found antibiotic-resistant bacteria and infectious diseases in CAFOs in California [8] and across the U.S. [9]; and
WHEREAS, given that three out of four emerging infectious diseases are zoonotic [10], CAFOs pose a serious risk to public health [11]; and

Citations:

[8] <https://www.vice.com/en/article/g5bjjb/the-next-pandemic-could-come-from-an-american-factory-farm>

- National/Global
 - Op-ed on Vice by Direct Action Everywhere. Discusses illegal trespassing on California hog farm to sample for zoonotic viruses which may cause a pandemic. Results found Proteus bacteria and E-coli, both common fecal bacteria expected in fecal swabs. They reference previous instances in Asia (bird flu) and North Carolina (swine flu). Antibiotic-resistant bacteria were not discovered in these samples.

[9] <https://www.scientificamerican.com/article/how-drug-resistant-bacteria-travel-from-the-farm-to-your-table/>

- National
 - A discussion on the impact of drug-resistant bacteria on farm for consumers, mostly focused on swine.

[10] <https://www.cdc.gov/onehealth/basics/zoonotic-diseases.html>

- National/Global
 - A CDC article on what zoonotic diseases are and how to prevent infection.

[11] https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf

- Repeat of [7]

UCCE response:

- Antimicrobial resistance in Northern California dairies (non-organic) is reported as lower than other regions in California, likely due to management of cows ([Abdelfattah et al., 2021](#)).
- The 84% of dairies in Sonoma County certified organic do not utilize antibiotics within regular herd management; only animals critically in need of antibiotics receive those medications and are then immediately moved to conventional, non-organic production.
- “Tuberculosis and brucellosis are potential zoonoses in cattle but due to a federal eradication program for *Mycobacterium bovis* (bovine tuberculosis), *Brucella abortus* and

Brucella melitensis, these diseases are uncommon in the United States except in a few areas where it persists in a wildlife reservoir” ([Washington State University](#)).

- Since 2014, the CDC has reported the following outbreaks of zoonotic diseases spread to humans from cattle and poultry ([CDC](#)):
 - Cattle
 - 2016: Dairy Bull Calves – Salmonella – 56 cases, 17 hospitalizations, 0 deaths
 - Poultry
 - 2023: Backyard Poultry – Salmonella – 1,072 illness, 247 hospitalizations, 0 deaths
 - 2022: Backyard poultry – Salmonella – 1,230 illness, 225 hospitalizations, 2 deaths
 - 2021: Backyard poultry – Salmonella – 1,135 illness, 273 hospitalizations, 2 deaths
 - 2020: Backyard poultry – Salmonella – 1,722 illness, 333 hospitalizations, 1 death
 - 2019: Backyard poultry – Salmonella – 1,134 illness, 219 hospitalizations, 2 deaths
 - 2018: Poultry Slaughter Plants – Psittacosis – 13 illness, 0 hospitalizations, 0 deaths
 - 2018: Backyard poultry – Salmonella – 334 illness, 56 hospitalizations, 0 deaths
 - 2017: Backyard poultry – Salmonella – 1,120 illness, 249 hospitalizations, 1 death
 - 2016: Backyard poultry – Salmonella – 895 illness, 209 hospitalizations, 3 deaths
 - 2015: Backyard poultry – Salmonella – 252 illness, 63 hospitalizations, 0 deaths
 - Over the past 10 years, 69 illnesses and 17 hospitalizations have been linked to commercial cattle and poultry in the US. However, 8,894 illness, 1,874 hospitalizations, and 11 deaths have been linked to backyard poultry. While speculative, this may be due to the lack of or reduction in biosecurity and animal health best management practices in backyard poultry management compared to commercial poultry operations.
 - Other animal-to-human zoonotic diseases over the past 10 years involving pet and wildlife animals caused 1,287 illnesses, 374 hospitalizations, 1 death:
 - Pet foods/products: Salmonella, two outbreaks, 160 illnesses, 36 hospitalizations, 0 deaths
 - Pet store puppies: Campylobacter, two outbreaks, 169 illnesses, 32 hospitalizations, 0 deaths
 - Reptiles and amphibians (small turtles, pet bearded dragons, pet crested geckos): Salmonella, 12 outbreaks, 759 illnesses, 265 hospitalizations, 1 death
 - Small mammals (pet hedgehogs, guinea pigs, pet rats, frozen feeder rodents): Salmonella and Seoul virus, five outbreaks, 170 illnesses, 27 hospitalizations, 0 deaths

- Wild birds: Salmonella, one outbreak, 29 illnesses, 14 hospitalizations, 0 deaths

WHEREAS, emissions from industrial animal agricultural operations are a significant cause of climate change, with livestock contributing 14.5 percent of all greenhouse gas emissions [12]; and

WHEREAS, by worsening climate change via the release of greenhouse gasses such as methane, CAFOs are a major contributor to the drought and wildfires in California [13],[14]; and

WHEREAS, it is projected that the global industrial agricultural sector will nearly double in greenhouse gas emissions by 2050[15]; and

Citations:

[12] <https://www.fao.org/news/story/en/item/197623/icode/>

- FAO webpage, but page not found – broken link (404)

[13] <https://vitalsigns.edf.org/story/what-does-californias-flooding-and-drought-have-do-climate-change>

- State
 - This article addresses rising climate temperatures that increase rainfall and flooding which consequently decrease snowfall (summer water reserves) thereby continuing drought in California as a whole. Livestock is not mentioned as a source of flooding or drought in this article.

[14] <https://www.ppic.org/publication/climate-change-and-californias-water/>

- County, State
 - This article suggests an update to California’s water system to accommodate increased flood and drought seasons with improvements in dams and reservoirs throughout the state by adding flood water by-passes to fill groundwater reserves. The Russian River dam might use weather forecast technology to help in moving water. Livestock is not mentioned within this article

[15] <https://www.ewg.org/news-insights/news/2023/02/will-agriculture-be-americas-leading-source-greenhouse-gas-emissions>

- National
 - This article states that the field of agriculture, through a national lens, could be leading contributor to greenhouse gas emissions without change, though currently only contributing 11% according to EPA data. It points out that agriculture emissions will fall if they adopt certain practices.

UCCE response:

- Climate smart agricultural practices are continually be implemented on farm, particularly through state funded programs, like the CDFA Alternative Manure Management and Healthy Soils Programs. Through these programs alone, 78 Sonoma County agricultural operations have implemented a variety of practices to reduce or sequester greenhouse gas emissions by 17,438 MTCO_{2e} annually ([CDFA OEFI](#)). This is the equivalent of removing 4,150 gasoline-powered passenger vehicles from the road annually ([EPA](#)). As agricultural operations continue to implement these practices, greater reductions can be expected.

Sonoma County Agricultural Commissioner Commissioner Response:

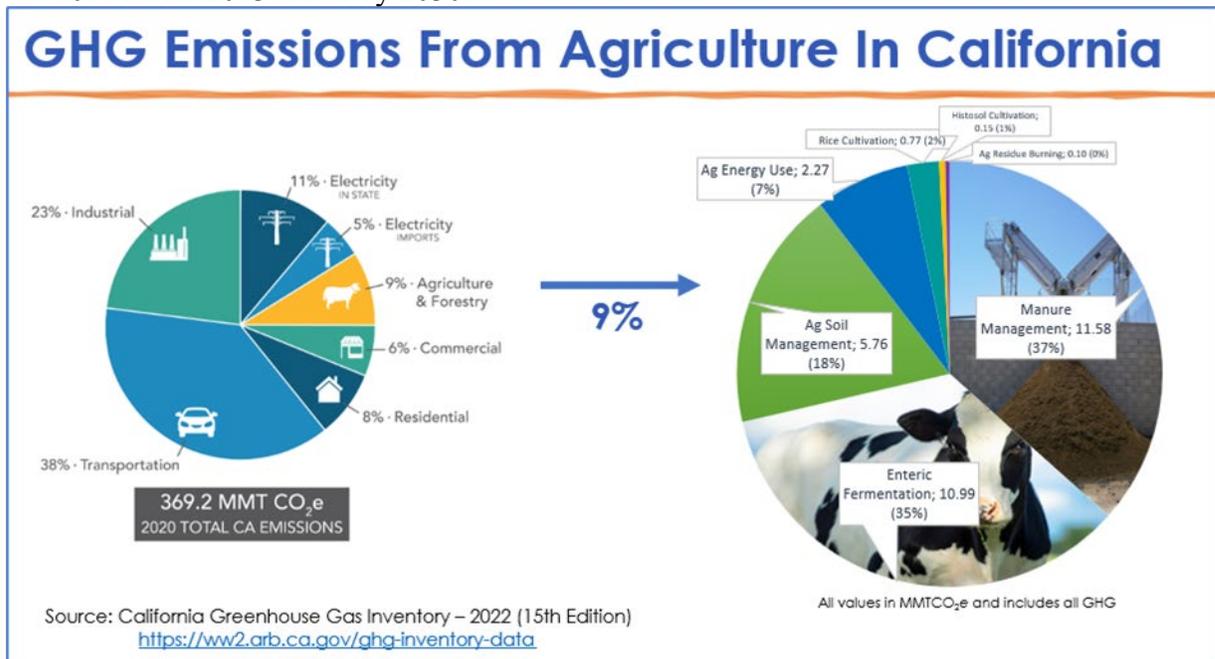
- The Environmental Protection Agency (EPA) has published their Inventory of U.S. Greenhouse Gas Emissions and Sinks study. This annual report provides an estimate of all man-made greenhouse gas emission sources in the U.S. and estimates the amount of carbon sequestered. U.S. agriculture represents just under 10% of total U.S. emissions when compared to other economic sectors. Overall U.S. greenhouse gas emissions increased from 2021 to 2022 by 1.3%, which is contrasted by a 1.8% reduction in agricultural emissions representing the largest decrease of any economic sector. The nearly 2% drop in U.S. agricultural emissions from 2021 to 2022 highlights the success and importance of voluntary, market- and incentive-based conservation practices.
- 2022 marks the lowest U.S. agricultural greenhouse gas emissions since 2012. By EPA's own methodology, emissions from agriculture account for 9.99% of all U.S. emissions. This represents a decrease of 1.8%, or 12 million metric tons, from 2021. EPA breaks agricultural emissions down further by crop cultivation, livestock, and fuel combustion. In 2022, crop cultivation emissions totaled 319 million metric tons, down 1.7% from 2021 and just over 5% of total emissions. Livestock emissions were down 2.1%, or 6 million metric tons, from 2021 and represent 4.3% of total emissions. Fuel combustion utilized by the agricultural sector contributed 41 million metric tons in 2022, down 1 million metric tons, or 1.2%, from 2021, and represent a small 0.64% of total emissions. For livestock categories enteric emissions from beef cattle sat at 2.19% of total U.S. emissions in 2022. This is a 2.43%, or 3.3-million-metric-ton, decline from 2021. Dairy cattle contribute only 0.77% of total emissions or 49 million metric tons – a 451,000-metric-ton decrease from 2021. Swine, sheep, and horses make up 0.09% of the total, respectively.
- The EPA also estimates agricultural emissions using a second methodology developed by the Intergovernmental Panel on Climate Change. By this measure, U.S. agricultural emissions for 2022 totaled 593 million metric tons, down 1.9%, or 11 million metric tons, from 2021, and representing 9.3% of all U.S. greenhouse gas emissions. This methodology breaks down agriculture into additional categories not considered in the previous methodology. The Intergovernmental Panel on Climate Change identifies the largest source of U.S. agricultural emissions as agricultural soil management, such as fertilizer applications and tillage practices, at 290 million metric tons, a 7.2-million-metric-ton, or 2.4%, decrease. Agricultural soil management represents approximately 50% of all agricultural emissions, but only 4.6% of total U.S. emissions.
- Following agricultural soil management, livestock-related emissions from enteric fermentation (cows and other ruminant animals) and manure management contributed emissions of 192 million metric tons and 82 million metric tons, respectively. These two emission sources represent 46% of agricultural emissions, and only 4.3% of total U.S. emissions. Other agricultural emission sources include methane from rice cultivation, field burning, and other minor sources like fertilization. Combined, these remaining categories represented less than 5% of agricultural emissions and 0.4% of U.S. emissions.
- Production of food, food security, as well as food mileage are important not just for farmers and ranchers, but also for the millions of families in the U.S. and around the world that U.S. and California agriculture feeds. The farther away food must travel to get to consumers, the more emissions are created and the higher the cost of that food. Agriculture as an industry takes sustainable resource management and greenhouse gas

emissions reductions seriously. The adoption of different soil and nutrient management practices on farms serve to shrink agriculture’s environmental footprint. Livestock producers have embraced technological innovation and production practices that increase output while reducing associated emissions.

- Not only have producers focused on improvements sustainability, but they have also focused on doing so while accommodating the demands of feeding more families. Since 1990, U.S. agricultural emissions have increased by 6.4% while the U.S. population increased 33%, adding over 83 million people in three decades. With advancements technology, agricultural emissions per capita have declined 20% since 1990. U.S. agriculture continues to be just under 10% of all greenhouse gas emissions, with livestock-related emissions about 3%.
- Source: <https://www.fb.org/market-intel/2022-epa-emissions-inventory-highlights-agricultures-sustainability-strides#:~:text=U.S.%20agriculture%20represents%20just%20under,decrease%20of%20any%20economic%20sector.>

CDFR response:

- Ag and Forestry sector in CA accounts for about 9% of total GHGs (not just methane); within that 9%, manure management and enteric fermentation make up over 70% (most of this is methane).
- Manure management has current, effective solutions to address emissions, while enteric does not quite yet. No approved mitigation measures for that right now in CA, although research is being done and various products are trying to navigate FDA and other approvals.
- State goals/requirements: general GHG reductions per AB 32, SB 32; but also, specific legislation on short lived climate pollutants ([SB 1383](#), 2016) which includes target for dairy and livestock sector – reduction in methane emissions from manure management to 40% below 2013 levels by 2030.



WHEREAS, globally, CAFOs and other intensive farming practices are the primary driver of biodiversity loss through dependence on inputs such as fertilizer, pesticides, energy, land, and water, and on practices such as monocropping and heavy tilling, which in turn reduces the variety of landscapes and habitats[16]; and

Citations:

[16] https://www.chathamhouse.org/sites/default/files/2021-02/2021-02-03-food-system-biodiversity-loss-benton-et-al_0.pdf

- National
 - This paper explores the value and goal of increasing biodiverse agriculture for a sustainable food system and to establish a 20% improvement across ecosystems by 2050. It discusses the loss of biodiversity from conversion of natural lands into agricultural use.

UCCE response:

- Organic dairy operations “must initiate practices to support biodiversity and avoid, to the extent practicable, any activities that would diminish it. Compliance with the requirement to conserve biodiversity requires that a producer incorporate practices in his or her organic system plan that are beneficial to biodiversity on his or her operation.” ([NOP](#))
- Sonoma County dairies are 84% organic, requiring 120 days on pasture annually. Of the over 53,000 acres managed by dairies, over 45,000 of those acres are used for grazing and 8,000 acres used for farming. Farming practices typically consist of producing grass silage, a high energy feed used to provide a balanced diet to cows, and then grazing cows or heifers following harvest. Organic certification prohibits application of certain pesticides and synthetic fertilizers.
- Sonoma County dairies predominately practice dry farming. This means that pastures and silage fields are watered with only rainfall and manure water and do not utilize surface and groundwaters. Dairies residing in the Santa Rosa basin do have the opportunity to irrigate pastures using tertiary treated water. This water comes from our wastewater treatment plant after a series of treatment processes. It is not appropriate to use as drinking water or immediately return to surface waterways; therefore, using this resource to grow grass, feeding animals, and helping sequester more atmospheric carbon, is a multi-beneficial use.
- Grazed pastures provide ideal viewsheds to Sonoma County residents while increasing carbon sequestration through managed grazing. Managed dairy grazing combined with seeding pastureland with high quality grasses containing perennial species (grass returns each season) leads to sequestering 22,768 MTCO₂e annually over how much the land would sequester if left unmanaged ([CDFA Healthy Soils COMET-Planner](#)). This is the equivalent of 5,419 gasoline-powered passenger vehicles driven every year or 1.5 billion smartphones charged annually ([EPA](#)).

WHEREAS, biodigesters (which can convert animal waste into energy) have been shown to be ineffective at mitigating the public health and environmental impacts of CAFOs, as they can produce other harmful chemicals without fully removing toxins from the environment[17]; and

Citations:

[17] https://www.foodandwaterwatch.org/wp-content/uploads/2021/03/ib_1906_biogas_manure-2019-web.pdf

- State, global
 - This article explores biogas digesters in Central Valley, California. It discusses the impacts of burning biogas, emergency situations regarding digesters, and the situation in Europe.

C DFA response:

- Dairy and livestock operations result in methane emissions from both enteric fermentation and manure management. Methane, a strong greenhouse gas, is at least 25 times more potent than CO₂ (on a 100-year basis - EPA: global warming potential). Dairy digesters address the emissions from manure management.
- Dairy digesters are a major contributor to the achievement of California's climate goals. SB 1383 requires the reduction of 40% methane from dairy and livestock sectors by 2030 from the levels of 2013. Along with a slate of additional alternative manure management strategies in use on dairies across our state (and duplicated elsewhere), these efforts represent the single largest opportunity to reduce methane emissions from the dairy and livestock sector.
- California has invested in dairy digesters through both California Climate Investments (CCI) and the General Fund. The DDRDP program requires 50/50 matching funds. For every 9 dollars that the state has invested in DDRDP, there is a reduction of 1 metric ton of carbon dioxide equivalent. This is the most efficient investment made in GHG reductions by CCI.
- Beyond capturing methane coming from manure emissions that would otherwise be released into the atmosphere, dairy digesters also result in the production of renewable energy and displacement of fossil fuels. Digester can produce renewable natural gas or electricity, with plans for expanding to hydrogen production soon. According to the CA Air Resources Board's GHG quantification methodology for the DDRDP program, the estimated fuel produced is 567,405,897 kWh/10yrs for electric projects and 53,103,824 MMBtu/10yrs for RNG projects.
- CDFA has 2 incentive programs supporting manure methane emissions reduction (AMMP, DDRDP). Digesters in CA tend to be covered lagoon digesters in the Central Valley, but that doesn't mean there aren't other options for dairies (cluster, tank style) of different size or in different regions; AMMP (non-digester manure management practices such as conversion of flush to scrape manure collection systems, solid separation of manure solids, or installation of compost bedded pack barns) also present available and effective options for improving manure management. Program successes and impacts relevant to State goals can be found in CARB's Analysis of Progress toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Target.

UCCE Response:

- No dairy digesters currently exist in Sonoma County; however, dairies are continuously looking to bring climate adaptive technologies onto their farms in financially and environmentally feasible ways.

WHEREAS, workers at CAFOs face health risks due to exposure to harmful substances and antibiotic-resistant bacteria, as well as high rates of respiratory injuries, musculoskeletal injuries, and anxiety and depression[18]; and

Citations:

[18] <https://clf.jhsph.edu/sites/default/files/2021-05/essential-and-in-crisis-a-review-of-the-public-health-threats-facing-farmworkers-in-the-us.pdf>

- Sonoma, State
 - This paper mentions that 30% of Sonoma County farm workers have US-based health insurance, and 15% of Sonoma County farm workers have diabetes. In other areas in California, farmworkers suffer chronic emotional and physical health issues while being under-paid.
 - In contrast, the paper addresses that California farm workers negotiated increased wages and better conditions in Southern California (Eastern Coachella Valley) in 2017. Additionally, California has outdoor heat regulations, bio monitoring programs (to reduce pesticide over exposure) as well as state mandatory pesticide use reporting with added restrictions for chlorpyrifos, and most recently the COVID-19 relief package.

UCCE response:

- Using the [CalEnviroScreen4.0 Data Dashboard](#), Sonoma County ranks in the 39.7 percentile for asthma, 27.1 percentile for low birth weight, and 38.4 percentile for cardiovascular disease in California. Of all parameters, Sonoma County is in the 24.7 percentile, indicating low risk for air pollutants causing illness. Most air quality concerns in Sonoma County are within city centers where transportation and human activity heavily contribute to emissions and air pollution.
 - For comparison, Marin County, a county with similar agricultural practices to Sonoma County, ranks in the 15.5 percentile for asthma, 28.3 percentile for low birth weight, and 14.1 percentile for cardiovascular. Alameda County, a Bay Area county with limited animal production, ranks in the 61.2 percentile for asthma, 54.9 percentile for low birth weight, and 43.4 percentile for cardiovascular disease in California. Tulare County, a predominately agricultural county, ranks in the 58.3 percentile for asthma, 54.4 percentile for low birth weight, and 74.5 percentile for cardiovascular disease.
- Antimicrobial resistance in Northern California dairies (non-organic) is reported as lower than other regions in California, likely due to management of cows ([Abdelfattah et al.,2021](#)).
- The 84% of dairies in Sonoma County certified organic do not utilize antibiotics within regular herd management; only animals critically in need of antibiotics receive those medications and are then immediately moved to conventional, non-organic production.

WHEREAS, CAFOs disproportionately affect low-income and disadvantaged communities, raising social and environmental justice concerns[19]; and

Citations:

[19] <https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2020/01/13/precautionary-moratorium-on-new-and-expanding-concentrated-animal-feeding-operations>

- National
 - This article explores public health concerns about US CAFOs producing 369 million tons of manure and administering nearly 2x the dosage of medical antibiotics (as compared to Europe) to animals regardless of health status.

UCCE response:

- As previously stated, Northern California exhibits lower levels of antimicrobial resistance compared to other California regions, likely due to cow management and 84% of dairies being certified organic, not utilizing antimicrobials for cow treatment. Additionally, due to the Veterinary Feed Directive, which limits use of antimicrobials in feed to use with supervision of a veterinarian ([FDA](#)), and the antibiotic use laws in California ([CDFA](#)), antibiotics are used judiciously and to prevent illness.
- Sonoma County dairies manage an average of 3.2 acres per mature dairy cow.
- Using the [California Climate Investments Priority Populations](#) tool, developed to indicate low-income communities in California, only 14% of Sonoma County dairies reside within a low-income community. Most dairies provide housing and utilities for free (not deducted from wages) to employees.
- Using the [Distressed Communities Index](#), which highlights disparities in economic well-being in US communities, Sonoma County is considered “prosperous” (scale = prosperous, comfortable, mid-tier, at risk, and distressed). Sonoma County ranks 13 out of 58 California Counties with a distress score of 18.7. Specifically looking at zip codes where dairies reside, those areas are, on average, considered “comfortable” with an average rank of 582 of 1,493 California zip codes. These areas have an average poverty rate of 7.9% (national rate: 12.6%).
 - For comparison, Marin County, a county with similar agricultural practices to Sonoma County, has a distress score of 12.9 with a 6.9% poverty rate, Alameda County, a Bay Area County with limited animal production, has a distress score of 12.9 with a poverty rate of 8.9%, and Tulare County, a predominately agricultural county, has a distress score of 66.2 with a poverty rate of 19.8%.

WHEREAS, proximity to CAFOs significantly decreases property values, with a 2015 study showing that properties within 3 miles of a CAFO lost up to 26% of their value and properties within ¼ mile of a CAFO lost up to 88% of their value [20]; and

Citations:

[20] <https://www.nar.realtor/animal-feedlots>

- National
 - A statement by the National Association of Realtors discussing the impact of AFOs and CAFOs on property value. Property values and references used in the statement are from midwestern states and regarding primarily hog farms.

UCCE response:

- Research determined that, while new AFOs developed in areas with no existing livestock decreased property value, if a house was previously surrounded by livestock, a new AFO facility would increase property value ([AAEA](#)).
- Forested, publicly and privately owned open space and privately owned open space in grass, pasture, and crops had similar high amenity values. Vacant open land was the least valued type of open space ([JSTOR](#)). Loss of managed lands could impact land and house values more than continuing to manage land with animals.
- 56% of Sonoma County dairies reside in the 94952 area code, an area considered an area of positive home value growth, with values averaging \$1.1 million, up 0.4%, according to the [North Bay Business Journal](#).

WHEREAS, legislation (the Farm System Reform Act) has been proposed in U.S. Congress which would place a moratorium on the construction of large CAFOs and enact other restrictions on resource-intensive factory farming[21]; and

WHEREAS, the American Public Health Association has called for federal, state, and local governments to impose a moratorium on new and expanding CAFOs[22]; and

WHEREAS, several other jurisdictions across the U.S. have placed restrictions on CAFOs[23]; and

Citations:

[21] <https://www.congress.gov/bill/117th-congress/senate-bill/2332>

- National
 - Dem. Sen. Booker introduced this bill, S.2332, a.k.a “Farm System Reform Act of 2021”, which places a moratorium on Large CAFOs; defines AFOs and Large CAFOs; and with penalty fines and transition assistance grants, would eliminate Large CAFOs before 2040. This was read and referred to Committee on Ag, Nutr., and Forestry July 2021. No other action mentioned.

[22] <https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2020/01/13/precautionary-moratorium-on-new-and-expanding-concentrated-animal-feeding-operations>

- Repeat of [19]

[23] <https://www.wisfarmer.com/story/news/2023/07/07/officials-in-the-remaining-towns-with-livestock-regulations-wonder-whether-they-too-are-in-legal-cro/70387371007/>

- Wisconsin
 - This editorial discusses a Wisconsin town and their experience with new hog farms. Laketown’s CAFO ordinances regulate operations, where regulations reduce property values and development potentials. Local ordinances are only legally allowed to supersede state laws if health & safety are at risk (i.e. infectious diseases, air pollution/odor, manure, carcasses and water pollution).

UCCE response:

- The introduced bill, the Farm System Reform Act, places a moratorium (halt) on CAFOs, and requires a country-of-origin labeling for beef, pork, and dairy products. Reducing the opportunities for animal facilities to expand in the US may increase the demand for products produced outside the US, potentially with less regulation on size and

environmental impact, and reduce locally and nationally produced food options for US consumers.

- In 2012, 58.5% of all dairy cows resided within herds of 500 or more cows ([USDA NAHMS](#)). A loss of over half the cows nationally would create a nutritional crisis for Americans, particularly families relying on milk powder baby formula.

WHEREAS, the County of Sonoma has a legitimate and substantial interest in promoting public health and encouraging responsible environmental practices; and

WHEREAS, it is the intent of Sonoma County to prohibit CAFOs in order to protect the environment, animals, and the health and well-being of its residents and communities; and

UCCE response:

- As previously noted, dairies in Sonoma County provide important ecosystem services, sequestering atmospheric carbon and providing locally sourced, organic dairy products to the community. Removing locally produced products would require products to be sourced from outside the community and reduce active management and carbon sequestration on working lands, increasing the carbon footprint of food acquisition for all Sonoma County residents. This will likely impact food cost for all socioeconomic statuses, as well.

WHEREAS, it is also the intent of Sonoma County to provide a retraining and employment assistance program for workers at CAFOs to facilitate the transition to safer forms of work; and

UCCE response:

- Sonoma County dairies employ approximately 280 full-time and 40 part-time employees while providing housing to approximately 640 employees and their family members. Most dairies provide housing and utilities for free (not deducted from wages).
- The [Sonoma County Housing Authority](#), as of 2023, indicated approximate monthly rent across the county as \$1,559 for a studio (\$18,708/yr.), \$1,805 for a one bedroom (\$21,660/yr.), \$2,290 for a two bedroom (\$27,480/yr.), \$3,218 for a three bedroom (\$38,610/yr.), and \$3,390 for a four bedroom (\$40,680/yr.). The median price of homes sold in Sonoma County in 2022 was \$822,000 ([CA Employment Development Department](#)).
- Sonoma County living wage is \$18.10/hour, or \$37,648 annually if working 40 hours per week ([County of Sonoma](#)).
- Sonoma County, as of 2023, has a 3,824-unit housing need. From 2014 to 2023, “2,289 housing units were permitted in unincorporated Sonoma County, including 466 units for lower-income families” ([Sonoma County Housing Element](#)).
- Using the [Distressed Communities Index](#), the housing vacancy rate in Sonoma County is 4.0% (national average: 7.6%).
- These data indicate potential difficulties finding and affording housing for displaced farm workers, and, therefore, their retention within the county.
- Language concerning the retraining program (“training needed to work at a legally acceptable agricultural operation or in a different job sector”) does not guarantee new employment.

- Using the [Distressed Communities Index](#), Sonoma County has a –3.9% in change of jobs (national average: -2.0%), indicating fewer jobs are being offered over time for displaced workers to gain employment.

WHEREAS, the present Ordinance is in line with Sonoma County’s values as an agricultural community that respects the environment and responsible agricultural practices;

UCCE response:

- In Sonoma County, 84% of dairies are organic certified. This certification through the National Organic Program establishes requirements for protection of natural resources and the environment. This is further protected through water quality regulations.
- Currently, 64% of dairy operations in Sonoma County produce milk going directly to products produced by Clover-Sonoma, Straus Creamery, Organic Valley, or Horizon, 10% goes to small farmstead cheese production, and the remaining 26% goes to milk companies who sell that organic milk to multiple companies including small creameries without their own milk production and to help fill volume needs of larger local creameries. The local creameries require exceptional land stewardship, animal welfare, and ethical practices from the dairies that they source their products from. They cannot produce these locally made and supported products without local dairy production.

Initiative Language

NOW, THEREFORE, the People of the County of Sonoma ordain as follows:

SECTION 1: ADDITION OF §26-18-075.

Section 26-18-075 is hereby added to read as follows:

Sec. 26-18-075 Animal Keeping: Concentrated Animal Feeding Operations

A. Purpose.

The Purpose of this Section is to protect the environment, animals, and the health and well-being of Sonoma County residents and communities by prohibiting the operation of CAFOs, as defined herein, within the unincorporated areas of the County.

B. Definitions.

The following words and phrases as used in this Chapter shall be defined as follows:

“Animal feeding operation” or “AFO” means a lot or facility that meets the regulatory definition of an AFO as set out by the Environmental Protection Agency in 40 CFR 122.23 as of August 2023[24]. Specifically, a lot or facility (other than an aquatic animal production facility) is deemed an AFO where the following conditions are met:

- (i) Animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and
- (ii) Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.

“Concentrated Animal Feeding Operation” or “CAFO” means an AFO which meets the definition of a Medium CAFO or Large CAFO, as defined herein, and set out by the Environmental Protection Agency in 40 CFR 122.23 as of August 2023, or which is designated as a CAFO of any size by the permitting authority[25].

“Large CAFO” means an AFO which confines at least the number of animals described in Table 18-0.

“Medium CAFO” means an AFO which falls within the size range in Table 18-0 and either:

- (i) has a man-made ditch or pipe that carries manure or wastewater to surface water; or
- (ii) the animals come into contact with surface water that passes through the area where they’re confined; or
- (i) is designated as a Medium CAFO by the permitting authority due to being a significant contributor of pollutants.

“Pre-Existing CAFO” means a CAFO currently in existence in Sonoma County at the time this Ordinance becomes effective.

“Small CAFO” means an AFO which confines fewer than the number of animals listed in Table 18-0 and which has been designated as a CAFO by the permitting authority as a significant contributor of pollutants.

Table 18-0: Size Thresholds for CAFOs

Animal Sector	Size Threshold: Large CAFOs	Size Threshold: Medium CAFOs
Cattle or cow/calf pairs	1,000 or more	300 - 999
Mature dairy cattle	700 or more	200 - 699
Veal calves	1,000 or more	300 - 999
Swine (weighing over 55 pounds)	2,500 or more	750 - 2,499
Swine (weighing less than pounds)	10,000 or more	3,000 - 9,999
Horses	500 or more	150 - 499
Sheep or lambs	10,000 or more	3,000 - 9,999
Turkeys	55,000 or more	16,500 - 54,999
Laying hens or broilers (liquid manure handling systems)	30,000 or more	9,000 - 29,999
Chickens other than laying hens (other than a liquid manure handling systems)	125,000 or more	37,500 - 124,999
Laying hens (other than a liquid manure handling systems)	82,000 or more	25,000 - 81,999
Ducks (other than a liquid manure handling systems)	30,000 or more	10,000 - 29,999
Ducks (liquid manure handling systems)	5,000 or more	1,500 - 4,999

C. Aggregation.

Two or more lots or facilities that collectively meet the definition of a CAFO shall together be deemed a CAFO if they are under common ownership and are either on adjoining parcels or share a waste disposal system.

D. Prohibition of CAFOs; Exceptions.

1. No person shall establish, operate, expand, or maintain a CAFO in unincorporated Sonoma County on or after the date of the enactment of this Section.

2. This Section does not limit or impact the availability of remedies under other applicable local, state and federal laws, regulations, and ordinances, including but not limited to laws, regulations, and ordinances regarding environmental protection and animal cruelty.
3. The prohibitions in this Section shall not apply to an evacuation area set up to temporarily stable animals in the case of a natural disaster or a declared state of emergency, or to a registered non-profit animal shelter, sanctuary, or rescue organization which does not sell animals or animal products.

E. Existing CAFOs; Phase-Out Period.

1. Notwithstanding anything in this Section, Pre-Existing CAFOs shall be deemed a nonconforming use and shall be required to register on a public database maintained by the Sonoma County Department of Agriculture, Weights and Measures.
2. Pre-Existing CAFOs shall be given a phase-out period of no more than three (3) years from the effective date of this Section to modify or terminate their operations such that they are no longer classified as a CAFO. Proof of this shall be provided to the Agricultural Commissioner prior to the end of the phase-out period. During the phase-out period, Pre-Existing CAFOs shall not increase the number of animals in confinement.
3. The Agricultural Commissioner or his/her designee shall inspect closed CAFOs within one month of receiving such proof of termination from a Pre-Existing CAFO to ensure that all relevant operations have ceased or been appropriately modified.
4. Any Pre-Existing CAFO taking advantage of the phase-out period mentioned in Subsection (E)(1) shall comply with Best Management Practices set forth by the Agricultural Commissioner, which shall be developed in collaboration with a California-based humane society and/or a California-based society for the prevention of cruelty to animals. The foregoing shall be in addition to any requirements imposed on CAFOs by County, State and Federal environmental protection agencies.
5. The Agricultural Commissioner shall establish a system to receive, investigate, and retain complaints related to this Section.

F. Violations.

1. Any person who continues to operate a Pre-Existing CAFO after the three (3) year phase-out period elapses, or who establishes or maintains a CAFO following the enactment of this Section, or who violates any other provision of this Section, shall be subject to a civil penalty of one thousand dollars (\$1,000) for the first offense, five thousand dollars (\$5,000) for the second offense, and ten thousand dollars (\$10,000) for the third and any subsequent offenses, payable to the Sonoma County General Fund.
2. Notwithstanding the foregoing, the Agricultural Commissioner or his/her designee may also pursue on behalf of the county any other civil or administrative penalty or remedy otherwise available for failure to comply with the requirements of this Section.
3. Each day, or portion thereof, during which the violation occurs shall be treated as a separate offense.
4. Nothing herein shall impact the standing of other interested parties, or the availability of remedies under other applicable federal, state and local laws, regulations and ordinances, including the remedies afforded any person set forth in Subsection I of this Ordinance.
5. The availability of funds under this Section shall not restrict any obligation by the County to provide retraining and employment assistance opportunities to CAFO workers.

6. For the purposes of this Subsection (F), “person” includes any owner, officer, or director of a CAFO. No penalties shall be issued to individuals solely for working at a CAFO operation unless they also meet one of the foregoing criteria.

G. Retraining for CAFO Workers

The County shall provide a retraining and employment assistance program for current and former CAFO workers during the phase-out period in Subsection (E)(1) and for an additional one year thereafter. The purpose of this program is to provide individuals who worked at a CAFO at the time of this Ordinance's enactment or who worked at a CAFO at any point during the phase-out period with the training needed to work at a legally acceptable agricultural operation or in a different job sector. This program shall be administered by the Agricultural Commissioner or his/her designee, along with qualified experts in employment law, animal rights, farm labor, and best agricultural practices. Such experts shall provide proof of their qualifications, which shall be subject to public disclosure. The County’s obligation under this Subsection (G) to provide retraining and employment assistance to CAFO workers shall not depend on the fines and penalties collected pursuant to Subsection (F).

H. Annual Report.

The Agricultural Commissioner or his/her designee shall prepare an annual report containing the following information: the number of CAFOs currently operating in unincorporated Sonoma County; the number of CAFO termination notices received in the previous year; the number of CAFO termination inspections conducted in the previous year; the number of CAFO workers in the retraining program; and the amount of penalties assessed and collected in the previous year. Such report shall be presented to the Board of Supervisors at a duly-noticed public hearing and posted on the Agricultural Commissioner’s webpage, beginning one year after the effective date of this Section and continuing until all CAFOs, as defined herein, have been phased out of the County.

I. Right of Action.

Any interested party may institute a civil proceeding for injunctive relief against a violation of this Section, and for whatever other additional relief the court deems appropriate. In any action brought pursuant to this Section, the prevailing party shall be entitled to reasonable attorney's fees and costs. The remedies available under this Section shall be in addition to, and shall not in any way restrict, any other rights or remedies under law. Nothing in this Section is intended to, or shall be interpreted to, conflict with the Constitution of the United States, the Constitution of the State of California, or with any state or federal law. For the purposes of this Section, “interested party” shall include but not be limited to any association, organization, society, or corporation organized for the purpose of protecting animals or the environment.

J. Retaliation Prohibited.

Any person who retaliates against another person for making a good-faith complaint that there has been a failure to comply with this Section is guilty of a misdemeanor.

K. Severability.

The provisions of this Section are declared to be separate and severable. The invalidity of any clause, phrase, sentence, paragraph, subdivision, section or portion of this Section, or the

invalidity of the application thereof to any person or circumstance, shall not affect the validity of the remainder of this Section, or the validity of its application to other persons or circumstances. In the event that any provision is severed, the remaining provisions of this Section shall be interpreted in light of its stated purpose and intent.

SECTION 2. AMENDMENT OF OTHER COUNTY CODE SECTIONS.

Section 26-04-020(C) is hereby amended by inserting the following between “Composting” and “Condominium” as Section 26-04-020(C)(31.5):

Concentrated Animal Feeding Operations (CAFOs). Concentrated animal feeding operation, or CAFO, shall have the meaning set forth in Section 26-18-075. Section 26-18-070(A) is hereby amended to read as follows:

Definition. The raising, feeding, maintaining and breeding of farm animals where animals are continuously confined in enclosed pens or similar structures, the majority of animal feed is provided by facility management rather than grazing, and animal wastes are concentrated on site. In the event that an operation falls under this definition and is also defined as a CAFO pursuant to Section 26-18-075, then Section 26-18-075 shall control.

Includes: Dairies, hog farms, veal production, and chicken and turkey ranches, and similar livestock where animals are continuously confined.

Excludes: Horses, goats, sheep, and similar farm animals; Concentrated Animal Feeding Operations (CAFOs).

Section 26-18-080(A)(1) is hereby amended to read as follows:

Excludes: Confined farm animal facilities, Concentrated Animal Feeding Operations (CAFOs), the keeping of household pets and wild or exotic animals.

Section 26-18-090(A)(2) is hereby amended to read as follows:

Excludes: Slaughterhouses, rendering plants, Concentrated Animal Feeding Operations (CAFOs).

SECTION 3. FUTURE AMENDMENTS.

In addition to the foregoing, the Board of Supervisors shall amend the County Code as needed within a reasonable time following the adoption of the Ordinance to effectuate this Ordinance, and from time-to-time as the necessity of any other amendments becomes clear.

SECTION 4. CONSTRUCTION & INTERPRETATION.

This Ordinance and its provisions shall be broadly construed and interpreted to accomplish its purpose and intent.

SECTION 5. CEQA.

This Ordinance is exempt from the California Environmental Quality Act (CEQA) as a citizen-sponsored initiative.

SECTION 6. SEVERABILITY.

If any provision of this Ordinance, or part thereof, or the application of any provision or part to any person or circumstance is held for any reason to be invalid or unconstitutional, the remaining provisions and parts shall not be affected, and the Ordinance as a whole shall be interpreted in light of its stated Purpose and Intent. The People of the County of Sonoma hereby declare that they would have passed this Ordinance and every section, subsection, sentence, clause or phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses or phrases be declared unconstitutional or invalid.

SECTION 7. EFFECTIVE DATE.

This Ordinance shall take effect immediately upon approval by the voters, or as soon as otherwise allowable under applicable law.

SECTION 8. CERTIFICATION; PUBLICATION.

Upon approval by the voters, the County Clerk shall certify to the passage and adoption of this Ordinance and shall cause it to be published according to law.

Initiative Citations

- [1] https://www.supremecourt.gov/opinions/22pdf/21-468_5if6.pdf
- [2] <https://sonomacounty.ca.gov/administrative-support-and-fiscal-services/clerk-recorder-assessor-registrar-of-voters/registrar-of-voters/elections/november-6-2018-general-election-final-results>
- [3] <https://www3.epa.gov/npdes/pubs/region9.pdf>
- [4] <https://www3.epa.gov/npdes/pubs/region9.pdf>
- [5] <https://www.livescience.com/39481-time-to-declare-animal-sentience.html>
- [6] <https://www.centerforfoodsafety.org/issues/307/animal-factories/animal-factories-and-animal-welfare>
- [7] https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf
- [8] <https://www.vice.com/en/article/g5bjjb/the-next-pandemic-could-come-from-an-american-factory-farm>
- [9] <https://www.scientificamerican.com/article/how-drug-resistant-bacteria-travel-from-the-farm-to-your-table/>
- [10] <https://www.cdc.gov/onehealth/basics/zoonotic-diseases.html>
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Potential Economic Impacts of a Proposition Limiting Livestock and Poultry Production in Sonoma County

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Background

The Coalition to End Factory Farming (CEFF) has recently created a new ballot initiative that could significantly impact livestock and poultry production in Sonoma County (Figure 1) if approved in the upcoming November elections. The CEFF is composed of numerous animal advocacy, environmental, and social justice organizations. The ballot initiative proposes a ban on concentrated animal feeding operations, or CAFOs. The proposed ban would prohibit the establishment of CAFOs in all areas of the county, including unincorporated areas. The ban also stipulates that existing CAFOs in Sonoma County would be given three years to cease operations or modify their practices, or else incur steep penalties for noncompliance.

However, it can be difficult to understand exactly which agricultural operations this ordinance would prohibit. Language in the ordinance describes animal feeding operations, or AFOs, as facilities that include animals stabled or confined for 45 days or more in a 12-month period. The ordinance explicitly prohibits medium and large AFOs based on their manure discharge and the number of animals, which varies depending on the species. For example, it would prohibit a large dairy CAFO having more than 700 animals; a medium CAFO with more than 200 animals would also be prohibited if animal waste is discharged into surface water. Smaller dairies with less than 200 animals could also be impacted if the dairy has been designated as a CAFO by the “permitting authority” as a significant contributor of pollutants. The ordinance also indicates that those who own two or more lots or facilities on adjoining parcels, or those that shared a waste disposal system, would be viewed collectively to determine whether or not they meet the definition of a CAFO.

CEFF claims the proposed measure intends to protect the environment, animals, and the health and well-

being of Sonoma County residents and communities by prohibiting the operation of CAFOs; however, the CAFO designation does not necessarily reflect animal welfare or care, greenhouse gas emissions, or management and simply classifies operations on their size and potential water quality risks. The objective of this study is to gain a better understanding of the potential economic impacts of this proposed ballot initiative on the Sonoma County economy.

Figure 1: Map of Sonoma County



Livestock and Poultry Production in Sonoma County

Agriculture in Sonoma County is diverse. While the highest valued agricultural output is wine grapes, animal production is also significant in the county. Milk is the second highest valued output, with eggs, cattle, and poultry all being in the top 10 commodities produced in the county. Given the variability in output and prices from year to year, we used data from the 2019–2021 Sonoma County Crop Reports to calculate a three-year average value of output to characterize the current livestock and poultry production for Sonoma County (Table 1).

Table 1: Current Livestock and Poultry Production in Sonoma County (2019–2021 Average)

2019-2021 Average Output Values	
Milk	\$136,427,400
Poultry	\$32,739,800
Eggs	\$30,092,200
Cattle/Calves	\$20,040,816
Sheep/Lambs	\$5,318,333
Hogs	\$391,600
Wool	\$59,267
Total	\$225,069,416

Source: Sonoma County Crop Reports 2019, 2020, and 2021.

Notes:

“Poultry” is Misc. Livestock and Poultry (includes chicks, pullets, fryers, roasters, ducks, turkeys, turkey poult, rabbits, goats, etc.)

“Eggs” is Misc. Livestock and Poultry Products (includes duck eggs, turkey hatching eggs, chicken eggs for consumption, egg by-products, and feathers)

It is difficult to identify what portion of these livestock and poultry operations would be directly impacted by the proposed ordinance prohibiting CAFOs in Sonoma County. While data is typically available describing the total output from these agricultural sectors, characteristics of individual farm operations in terms of specific numbers of animals are often lacking. To capture local, pertinent, and accurate information, we worked with University of California Cooperative Extension (UCCE) Sonoma to provide details regarding the number of dairy operations and their approximate herd size in Sonoma County. UCCE Sonoma was able to identify a total of 50 dairy operations in the county, of which 5 would be considered a large CAFO and 33 would be considered a medium CAFO under the ordinance. While this represents approximately $\frac{3}{4}$ of the dairies in the county, it represents nearly 93 percent of the dairy livestock. In addition, it was determined that some of the smaller dairy operations could be classified as a small CAFO under the ordinance and still subject to the restrictions in the proposed ordinance. As such, it appears that nearly all of the dairy production in Sonoma County could be directly impacted by the proposed ordinance. While some efforts were made to better understand the structure of the poultry, egg, and cattle production sectors, we were not able to identify the specific number of animals within each operation to allow us to determine what portion of these sectors might be prohibited as a CAFO under the proposed ordinance. However, conversations with local producers and agricultural stakeholders have indicated that these other livestock and poultry operations might be impacted by the proposed ordinance in a similar way to the dairy industry. As such, this study examines the economic impacts associated with a loss of all livestock and poultry production in Sonoma County as a result of the proposed ordinance.

Economic Impact on Sonoma County

The economic impact associated with changes in livestock and poultry production will include more than just the value of lost farm production; it also needs to capture the impacts these changes have on other sectors of the economy. To measure the total economic impact, the indirect and induced impacts of these changes must also be estimated. Indirect impacts are generated from the business-to-business purchases along the supply chain. For example, reducing the amount of dairy production will likely have indirect impacts on related sectors like feed sales, farm equipment sales, trucking companies, etc. Induced impacts capture the effect of reduced personal consumption expenditures by households as a result of less wages and income being received from the agriculture industry. Induced impacts will capture the regional impacts of spending less of this agricultural income on a variety of other economic sectors like eating out at restaurants, spending on home improvements, medical services, retail establishments, etc.

The economic impact of losing livestock and poultry production in Sonoma County was modeled using the Impact Analysis for Planning (IMPLAN) System (IMPLAN Group, 2024). IMPLAN is a tool that is used to construct regional economic input-output (I-O) models. Input-output analysis uses a mathematical modeling approach to capture the relationships between various sectors of an economy. The IMPLAN model uses more than 500 different sectors that are based on the Bureau of Economic Analysis’s (BEA) national input-output study. IMPLAN is used widely for economic impact modeling and is considered the standard approach. In 2009, the United States Department of Agriculture (USDA) recognized the IMPLAN modeling framework as “one of the most credible regional impact models used for regional economic impact analysis” (ECONorthwest, 2012).

The first step in conducting the economic impact analysis is developing the direct impact scenario. While there is uncertainty regarding which animal feeding operations would be prohibited by the proposed ordinance, we examined a scenario where the ordinance resulted in a total loss of all livestock and poultry production in Sonoma County. The average livestock and poultry output values described previously in Table 1 were then adjusted to reflect the appropriate economic sectors that are modeled within the IMPLAN framework (Table 2).

Table 2: Linking County Crop Report Data to IMPLAN Sectors

2019-2021 Average Output Values			Economic Sector in IMPLAN	
Milk	\$136,427,400	→	Dairy Cattle and Milk Production	\$136,427,400
Poultry	\$32,739,800	} →	Poultry and Egg Production	\$62,832,000
Eggs	\$30,092,200			
Cattle/Calves	\$20,040,816	→	Beef Cattle Ranching and Farming	\$20,040,816
Sheep/Lambs	\$5,318,333	} →	Animal Production (except Cattle, Poultry, and Eggs)	\$5,769,200
Hogs	\$391,600			
Wool	\$59,267			
Total	\$225,069,416		Total	\$225,069,416

Source: Sonoma County Crop Reports 2019, 2020, and 2021; IMPLAN.

We then adjusted these values for inflation and removed these output values from the regional economic model to examine the impacts in current 2024 dollars. The results of these economic impacts are presented in terms of lost Output, Labor Income, and Employment. Labor Income consists of proprietary income (income received by self-employed individuals including private business owners and owner-operators) and wages (includes all worker salaries, payments, and fringe benefits paid by employers), and employment is presented as the number of wage and salary employees, as well as self-employed jobs.

Table 3: Economic Impact of Losing All Livestock and Poultry Production in Sonoma County (Output Lost, Labor Income Lost, and Jobs Lost)

	Output	Labor Income	Total Employment
Direct Impact	\$259,049,852	\$36,058,857	701
Indirect Impact	\$121,666,257	\$31,391,115	469
Induced Impact	\$37,583,610	\$12,934,169	211
Total Impact	\$418,299,719	\$80,384,141	1,381

Source: IMPLAN.

Results

The results presented in Table 3 represent a significant impact to the Sonoma County economy if their livestock and poultry production is jeopardized by the proposed ordinance. While we estimated a **direct loss** of around \$259 million in the livestock and poultry output, there was an additional \$122 million worth of **indirect impacts** to related industries and an additional \$38 million worth of lost output from the **induced effects** of reduced spending in the region (a multiplier effect of 1.61). We estimated similar results in terms of lost labor income and employment: for every job lost from the livestock and poultry production sector, we can expect to lose one additional job from the Sonoma County economy (a multiplier effect of 1.97). While some may question the extent of the impacts, there are numerous agricultural stakeholders that believe a likely outcome of this ordinance will be the loss of all commercial animal production from Sonoma County. The limitations of this study (below) also acknowledge some additional impacts that might be underestimated by these results. The authors of this report believe more work needs to be done to better understand exactly how this ordinance would be applied and which operations would be prohibited and classified as a CAFO under this ordinance before moving forward with any new policies.

For every job lost from the livestock and poultry production sector, we can expect to lose one additional job from the Sonoma County economy.

Limitations

While our estimates of the total economic impact of lost livestock and poultry production in Sonoma County will capture some of the downstream impacts on agricultural processors as a result of less local production (indirect impacts), the input-output modeling used in this study will automatically source alternative inputs from out of the area. For example, while a loss of local dairy production in Sonoma County will negatively impact local dairy processors (fluid milk, cheese, ice cream, etc.), the economic modeling for this study assumes more raw milk will be imported from surrounding counties to meet the demands of the processors. However, it is possible that there are regional conditions that could make it prohibitively expensive (or unreliable) to import agricultural commodities from out of the region, and a reduction in local agricultural production could result in a processor going out of business. Without more work examining the local nuances regarding the agricultural processing supply chain in Sonoma County, the ability to estimate whether or not a particular processor would go out of business and result in even larger economic impacts would be outside the scope of this report. In addition, importing more agricultural commodities from out of the area may have effects on retail prices and the carbon footprint of these shipments, which are outside the scope of our analysis and not included in our estimates.

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