

Carbon Farming

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Sustainable Organics Recycling

Making Healthy Soils Our Savior

Probably no event in this country's history did more to emphasize the importance of soil health than the Dust Bowl. Beginning in 1932, persistent drought conditions on the Great Plains caused widespread crop failures and exposed the region's soil to blowing wind. A large dust storm on May 11, 1934 swept fine soil particles over Washington, D.C. and three hundred miles out into the Atlantic Ocean. Outcry from both the public and leading conservationists urged for the creation of a national soil conservation agency. The result was the Soil Conservation Act (PL 74-46), which President Roosevelt signed on April 27, 1935, creating the Soil Conservation Service, later renamed the National Resource Conservation Service, in the USDA.

Nearly 80 years later, as we embarked upon this *International Year of Soils 2015*, with California facing a drought of biblical proportions, Governor Brown released his budget which included the following message on healthy soils and their climate change benefits:

"As the leading agricultural state in the nation, it is important for California's soils to be sustainable and resilient to climate change.

Increased carbon in soils is responsible for numerous benefits including increased water holding capacity, increased crop yields and decreased sediment erosion. In the upcoming year, the Administration will work on several new initiatives to increase carbon in soil and establish long term goals for carbon levels in all California's agricultural soils. CDFA will coordinate this initiative under its existing authority provided by the Environmental Farming Act."

Now, during *International Compost Awareness Week*, the process for advancing the **Healthy Soils Initiative** is beginning to crystallize. CDFA has released the attached policy framework and announced that they, in coordination with Governor's Office, Air Resources Board, CalRecycle, Department of Conservation, Department of

Pesticide Regulation, Department of Water Resources, and the Water Boards, will lead a stakeholder process, commencing with a May 14, 2015 meeting of the Environmental Farming Act Science Advisory Panel (EFA SAP), here in Sacramento, to promote **Carbon Farming** (see insert).

The **Healthy Soils Initiative** establishes both short - and long-term actions for enhancing soil health and compost is front and center of many elements outlined. Of primary importance to the composting industry, short-term actions include:

- Establish a short- and long-term goal for building soil organic matter in California's agricultural and degraded soils by December 2015. These goals will be established through stakeholder meetings with scientific input (lead CDFA and CalRecycle).
- Encourage organic diversions from landfills to more beneficial uses, including composting facilities, by a tiered tipping fee or complementary mechanism that incentivizes the diversion of organics. (lead CalRecycle).

The key, long-term action identified speaks loudly to CalRecycle's commitment to our industry's future:

- Increase governmental efficiencies to enhance soil health on public and private lands. Increase the generation and use of compost in California to improve soil health, by permitting 100 new composting and anaerobic digestion facilities in California by 2020 (lead CalRecycle).

"Drought to drought, dust to dust", California is baking as the next Dust Bowl. "Ash to ash, biochar to biochar", biomass can be gasified to sequester carbon in the soil for centuries. In this *International Year of Soils* with the **Healthy Soils Initiative**, we commit this compost and biochar to the ground.

Key Bill Summaries

SB 367 (Wolk), the Agriculture Climate Benefits Act, would promote **Carbon Farming** projects, including carbon sequestration through compost and biochar use on agricultural lands. This bill would enhance the long-term viability of California agriculture by supporting activities which reduce global warming impacts that may negatively impact it and the rest of the state and support California agriculture in pursuing reductions in greenhouse gas emissions and increased carbon storage in agricultural soils and woody vegetation.

AB 1045 (Irwin) would require CalEPA to coordinate with CalRecycle to develop and implement policies to aid in diverting 50% of organic waste from landfills by 2020 by promoting the use of agricultural, forestry, and urban organic waste as feedstock for compost and by promoting the appropriate use of that compost throughout the state. It also requires CalEPA to promote policies that reduce at least five million metric tons of greenhouse gas (GHG) emissions per year through the development and application of compost on working lands, **Carbon Farming**, in coordination with CDFA.

The bill requires Cal-EPA to convene the Department of Resources Recycling and Recovery, Air Resources Board and the State Water Resources Control Board, to ensure proper coordination of agency regulations and goals to implement these measures.

AB 761 (Levine) would establish \$50 million in grants, to be overseen by the Department of Conservation's Resource Conservation Districts, to fund **Carbon Farming** projects that increase carbon sequestration on agricultural lands, ranches, and ranches, which improve water soil retention, and improve the economic and ecological viability of working lands, increasing resilience to climate change and drought.

SB 742 (Hertzberg) - This bill requires each state agency and each large state facility to divert at least 60% of solid waste from landfills through source reduction, recycling, and composting activities on and after January 1, 2018. According to the author, "The State must, by example, contribute to achieving its own policy goal. Their participation will have important practical and symbolic effects, and will encourage local governments and businesses to do more."

AB 1247 (Irwin) (CCC Sponsored) explicitly excludes composters from collecting sales tax on compost sold for agricultural use in the production of food for human or animal consumption, whether as an organic input material, or in conventional agricultural systems.

AB 864 (Williams) would reestablish a temporary permitting system for solid waste facilities which would then to complete the solid waste facility permit process with CalRecycle, without having LEAs required to shut down a substantial number of existing operations carrying out previously unregulated activities. With numerous composting facilities needed to expand, in an effort to handle food waste required for diversion under AB 1826, and other policy drivers, this measure could allow LEA flexibility during the transition from EA Notification to Full Solid Waste Facility Permit.

AB 385 (Chu) – has been amended to focus on creating a Newby Island Landfill Community Advisory Panel.

AB 1103 (Dodd) current spot bill language would establish statutory definition of food waste. Sponsor has indicated bill will be amended to create a registration, tracking, and reporting system for any entity hauling food waste, whether it is a commercial entity or a self-hauler.

[SB 367 \(Wolk\)](#)

TOPIC: **Carbon Farming** program for greenhouse gases to promote Carbon Projects.

STATUS: Heard 4/29/15 in Senate Environmental Quality Committee. Passed as amended, and re-referred to the Committee on Appropriations.

SUPPORT

[AB 1045 \(Irwin\)](#)

TOPIC: Requires CalEPA to establish food waste diversion goals and related GHG reductions, and enhance coordination of CalRecycle, ARB, and SWRCB to achieve **Carbon Farming** goals.

STATUS: Assembly; read second time, ordered to third reading.

SUPPORT

[AB 761 \(Levine\)](#)

TOPIC: **Carbon Farming** for \$50 million.

STATUS: Heard in Assembly Water, Parks and Wildlife on 4/28/15. Passed as amended, and re-referred to the Committee on Appropriations

WATCH

[AB 199 \(Eggman\)](#)

TOPIC: Sales and tax exclusion for projects that use process recycled feedstock such as compost processing equipment.

STATUS: Assembly Review and Taxation; hearing scheduled 5/11/15.

SUPPORT

[AB 590 \(Dahle\)](#)

TOPIC: Create the Biomass State Cost Share Account within the Greenhouse Gas Reduction Fund for the purposes of maintaining the current level of biomass power generation in the state and revitalizing currently idle facilities in strategically located regions.

STATUS: Heard 4/27/15 in Assembly Utilities and Commerce Committee. Passed as amended, and re-referred to the Committee on Appropriations.

SUPPORT, if amended to explicitly support agricultural/urban materials

[AB 864 \(Williams\)](#)

TOPIC: Authorizes LEAs to issue temporary permits for solid waste operations.

STATUS: Read second time 5/4/15 in Committee on Appropriations. Ordered to third reading.

SUPPORT - Staff recommended

Update to Compostable Regulations

Over nearly four years, CalRecycle has undertaken efforts to update the existing regulations regarding compostable materials and transfer/processing facilities in order to address the changing nature of organic waste handling throughout California, as well as safely enable the needed growth in diversion of this waste stream to meet their Strategic Directive 6.1 and the sustainability goals of the state. In this quest, CalRecycle staff and stakeholders identified more than 15 issues, of varying levels of importance, with formal rulemaking set to conclude before October 2015.

CalRecycle officially released the revised draft regulations – resulting from over 100 comments received – on April 21, 2015, with comments due on May 6, 2015. Many key issues of concern for CCC were addressed to some degree, including: the definition of vegetative food material, the allowable physical contamination limits of outgoing compost or chipped/ground green material to be applied to land, land application of compostable materials, dairy digestion regulation, and chipping and grinding operations/facilities regulation.

CCC has worked hard on setting appropriate limits for allowable physical contamination of outgoing materials for both chipping and grinding as well as compost products; original draft language had proposed contamination for all materials to be limited to 0.1%. While CalRecycle has not placed any limit on inbound food material contamination – or, more specifically, limiting contamination to meet the definition of “food material” and clearly differentiate it from MSW – they have raised the level of outbound physical contamination for compost and chipped/ground material to 0.5%, as per our request. We will continue to push for an extension of the implementation deadline from the currently proposed January 1, 2018 to at least January 1, 2020 to allow time for systematic changes, including outreach and education, during a time frame where numerous new food material generators

will be enrolled in programs under AB 1826, and new green materials will be redirected from current use as ADC. Processors and jurisdictions will need considerably more robust generator education and compliance programs over the next several years to clean up our organics material stream in order to “close the loop” and create more marketable products with widespread acceptance, as AB 1826 is implemented.

While land application of urban green waste continues to be a threat as a potential pathway for movement of invasive pests, agricultural by-products have been defined and largely granted an exemption from these regulations. This is a relief to many agriculture industry stakeholders who fought hard in the waning days of informal rulemaking to avoid being inadvertently swept into this new oversight. Meanwhile, the new proposed regulations appear to have expanded the amount of land application on agriculturally-zoned property to up to three applications of 12” each where the “compostable material shall not exceed 12 inches in total, accumulated depth on the land surface”. It remains to be seen if that is the intent of the new language, but is hopefully only a disturbing typographical error. We will be working with other stakeholders to gain clarification, and rebut if needed.

While the new proposed regulations for chip and grind operators require sampling and testing of outbound materials going to land application, there is still no requirement for records retention or tracking of materials shipments. We will continue to push for improved record-keeping requirements.

Lastly, while dairy digesters remain subject to reduced CalRecycle oversight, purportedly under the reasoning that Water Board waste discharge requirements provide adequate environmental protection, new regulatory language now limits their exclusion to only pumpable materials, heeding our request to limit onsite processing of food materials at dairies.

TITLE 14/27

TOPIC: Revision to Compostable Materials & Transfer/Processing Regulations

CalRecycle is updating regulations to address a broad list of topics, mainly related to the expanding diversion of organic materials from landfills.

STATUS: Proposed draft language addressing many issues raised, including physical contaminant limits for compost and limits on land application of agricultural and food processing materials, has been released on April 21, 2015. Comments are due May 6, 2015.

WASTE DISCHARGE REQUIREMENTS FOR COMPOSTING FACILITIES – REGULATORY UPDATE

The State Water Resources Control Board (SWRCB) is continuing efforts to establish statewide regulations for composting facilities. The SWRCB officially released a Draft Environmental Impact Report (DEIR), including an economic analysis, on January 13, 2015.

A public workshop was held on Friday, February 13, 2015 to provide information and receive comments on the DEIR and proposed WDRs; final comments on these documents were due by noon, March 2, 2015. The SWRCB plans to adopt these WDRs at their June 16, 2015 Board Meeting.

CCC joined with a large group of industry stakeholders to provide alternative regulatory language in both joint meetings and a letter seeking workable, cost-effective measures. New draft regulatory language is expected to be released around the end of May.

Ventura Carbon Project

The California Compost Coalition (CCC) is a registered Lobbying Coalition with the Fair Political Practices Commission (FPPC), created in 2002 by a group of compost operators in response to demands for increased recycling of organic materials and production of clean compost, bioenergy, renewable natural gas, and biochar.

The California Compost Coalition represents member organic material recyclers and compost operators with a unified statewide voice on many issues: product safety and standards, government regulations, environmental planning, and marketing.

Members

Agromin
Atlas ReFuel
Caglia Environmental
California Wood Recycling
Cold Canyon Compost
CT Bioenergy Consulting LLC
Marin Sanitary Service
Mt. Diablo Recycling
Napa Recycling Compost
Northern Recycling Compost
Organic Waste Solutions
Phoenix Energy
Quackenbush Mt. Compost
Recology
Sonoma Compost
Tracy Delta Compost
Upper Valley Recycling
Zanker Road Resource Management
Z-Best Compost Facility
Zero Waste Energy, LLC

Executive Committee

Bill Camarillo, Agromin
Greg Kelley, Northern Recycling Compost
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www.californiacompostcoalition.org

Agromin is a pioneer in the sustainable management of biodegradable resources and is headquartered in Ventura County, serving Southern California with several composting facilities. Agromin is a founding member of the California Compost Coalition and is dedicated to the enhancement of our industry, our society, and the environment through innovation at each turn of the recycling loop. Agromin has been carbon farming for decades and will be kicking off the Ventura Carbon Project in 2015.



Each year, Agromin converts almost 380,000 tons of recycled organic materials into rich living compost, mulch, and other premium soil products for area farmers, landscapers and gardeners. Resulting from this process of sustainably renewing our soil resources, Agromin contributes to water conservation, prevention of soil depletion, reduction in greenhouse gas (GHG) emissions and a decreased need for oil-based fertilizers and chemicals.

Agriculture is the largest customer for Agromin's composted organic products. California has 30 million acres of farmland and almost 8 million acres in harvested crops. The "Certified Organic" label has increased awareness and opportunities for California farmers to use organic products such as those from Agromin that are made from urban compost. Using renewable organic materials, recycling completes an urban-to-agriculture loop that helps meet growers' commitments to "sustainability" - balancing the very real needs for housing and for environmental protection. For cities and communities surrounded by agriculture or with pockets of agriculture within, an urban-to-agriculture program may be the true solution for helping recycle green materials and assisting agriculture with sustainable carbon farming methods. Our Ventura County partner exemplifying this balance is the Limoneira Company ([Download Limoniera/Agromin Case Study pdf](#)) which has hosted our compost facility for over 10 years.

Agromin is currently conducting a research project on the use of biochar in the covered aerated static pile process to minimize emissions and odors. Agromin works with the University of California Cooperation Extension in Ventura, and other experts, on using compost for several other agricultural applications in Ventura County. Agromin has teamed with Cool Planet Energy Systems, also of Ventura County, in using biochar for many agricultural applications. [CoolTerra™](#) is a multi-functional soil amendment for enhancing

plant and soil vitality with applications in horticulture, turf and landscape, viticulture, row crops, fruit and nut trees, and composting. [CoolTerra™](#) is highly porous, acting like a sponge to retain water and nutrients at a plant's root zone, increasing water use efficiency and reducing the need for fertilizer. Its pore structure and chemistry provides surfaces where beneficial soil microbes can attach and flourish. Enhancing the microbe population in the soil increases the ability of the plant to uptake nutrients, resulting in larger and healthier plants.

Agromin has tested compost and biochar substrates on strawberries to replace methyl bromide with a much safer organic products. Agromin has developed compost substrates for use in tomato hothouses that have significant increased yields with substantially reduced water usage. Agromin is continuing its work with the Limoneira Company on the biofiltration of their wastewater and the use of biochar to remove chlorides.

While it may be too late to save agriculture in Orange and Los Angeles counties, agriculture in Ventura County is worth saving because of its untapped potential. The Ventura Carbon Project goal is to realize the full potential of agriculture by increasing yields, decreasing water use with compost and biochar use that will sequester the carbon for generations while building healthy soils.

Healthy Soils Initiative Proposal

Issue Statement:

California is the nation's leading agricultural production state in terms of both value and crop diversity. Soils are fundamental for crop growth and food production. The importance of soils has been memorialized by the United Nations Food and Agriculture Organization after they recognized 2015 as the Year of the Soil. With limited new arable land that is capable of growing food crops in California and an ongoing drought, it is critical to ensure the soil system is sustainable long into the future, resilient to potential climate change impacts such as variable temperatures and precipitation, and to be able to produce crop yields to sustain a growing local and global population. The term "healthy soils" refers to ensuring that our agricultural soils have adequate soil organic matter (SOM). Increasing the amount of SOM, from its current levels, in soils can provide multiple benefits such as:

- Source of nutrients for plants – SOM contains important nutrients that contribute to plant growth and yields (e.g., nitrogen and sulfur).
- Water retention – SOM has the ability to hold up to 20 times its weight in water.
- Contributes to the environmental fate of synthetic inputs – SOM affects persistence and biodegradability of pesticides and other soil inputs.
- Carbon sink – Stabilized carbon stored in soil serves as a carbon sink, preventing the escape of carbon dioxide and methane greenhouse gases to the atmosphere.
- Soil structure stability and reduced erosion – Soil carbon can combine with the inorganic clay mineral fraction to form structural units called aggregates. Aggregated soils have improved aeration, water infiltration and resistance to erosion, dust control, as well as numerous other benefits.
- At least a quarter of the world's biodiversity lives in the soil.

Conceptual Proposal

Recently, the Brown administration recognized the importance of soil health in the Governor's 2015-16 proposed budget; "as the leading agricultural state in the nation, it is important for California's soils to be sustainable and resilient to climate change. Increased carbon in soils is responsible for numerous benefits including increased water holding capacity, increased crop yields and decreased sediment erosion. In the upcoming year, the Administration will work on several new initiatives to increase carbon in soil and establish long term goals for carbon levels in all California's agricultural soils. CDFA will coordinate this initiative under its existing authority provided by the Environmental Farming Act". Consistent with this initiative, several actions have been identified to:

- Protect and restore soil organic matter (soil carbon) in soils to ensure climate change mitigation and food and economic security
- Identify sustainable and integrated financing opportunities, including market development, to facilitate increased soil organic matter
- Provide for research, education and technical support to facilitate healthy soils
- Increase governmental efficiencies to enhance soil health on public and private lands
- Ensure interagency coordination and collaboration

Short Term Actions (within a year)

- Establish a short- and long-term goal for building soil organic matter in California's agricultural and degraded soils by December 2015. These goals will be established through stakeholder meetings with scientific input (lead CDFA and CalRecycle).
- Establish a soil health initiative coordinator position to facilitate interagency activities including interagency communication, collaborations and to ensure resources optimization and permit streamlining to build soil carbon with carbon-based inputs (lead CDFA).
- Identify critical agronomic and economic research needed to fill knowledge gaps and build mapping tools for increasing soil organic matter throughout the state (lead CDFA).

Administration/Department of Food and Agriculture Work Product

- Identify demonstration projects and contract with University of California Cooperative Extension (UCCE) to begin the cycle of management practice adoption to implement research objectives that meet soil carbon goals (lead CDFA).
- Integrate incentives for improved soil management practices into the Sustainable Agricultural Lands Conservation Program (lead Department of Conservation).
- Encourage organic diversions from landfills to more beneficial uses, including composting facilities, by a tiered tipping fee or complementary mechanism that incentivizes the diversion of organics. (lead CalRecycle).
- Provide healthy soils guidance in the Climate Change Handbook for Agricultural Water Management Planning as well as in public and outreach and education efforts (lead DWR).
- Facilitate discussion on the benefits of compost use when managing nitrogen and include as a separate component in the nitrogen management plans required by the Irrigated Lands Regulatory Program (lead Water Boards).
- Grow CDFA's State Water Efficiency and Enhancement Program to promote soil management practices that improve water retention (lead CDFA).
- Add healthy soils as an Efficient Water Management Practice (EWMP) in the guidebook to assist Agricultural Water Suppliers to Prepare an Agricultural Water Management Plan, and as a co-benefit in water efficiency grant programs (lead DWR).
- Explore opportunities to implement healthy soil management on construction, maintenance and operation plans in DWR (lead DWR).
- Explore with other Agencies opportunities for implementation of healthy soil management on public lands.

Long Term actions (1-5 years)

Identify sustainable and integrated financing opportunities, including market development, to facilitate increased soil organic matter

Develop and fund incentive and demonstration programs with new and existing resources such as Resource Conservation Districts and UC Cooperative Extension, to promote GHG reductions, carbon sequestration, cover crops, crop rotation and organic amendments including compost to build soil carbon, increase water holding capacity and ensure crop yields for food production through on-farm management practices (lead CDFA).

Provide for research, education and technical support to facilitate healthy soils

Identify and secure resources to contract with the appropriate academic institution to develop a user-friendly soil management data base to incorporate research findings and practical applications.

Identify and secure short and long term funding sources to support a robust scientific research program that will fund research on topics such as carbon farming, subsidence reversal, wetland restoration, drainage issues, salt accumulation and multi-benefit farming to support and enhance healthy soils (lead CDFA).

Increase governmental efficiencies to enhance soil health on public and private lands

Increase the generation and use of compost in California to improve soil health, by permitting 100 new composting and anaerobic digestion facilities in California by 2020 (lead CalRecycle).

Ensure interagency coordination and collaboration

Include in the regular coordination between agencies the potential for broader discussions on soil health. Such as: include Healthy Soil Initiative practices to promote groundwater recharge and groundwater quality protection in DWR Sustainable Groundwater Management Program (lead DWR); with the ARB on dust mitigation as a key element in all Climate Change work across Cabinet.