



## COMMUNITY ENVIRONMENTAL RESEARCH PROJECT OF THE SANTA MARIA VALLEY

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To: County of Santa Barbara Air Pollution Control District  
From: Community Environmental Research Project of the Santa Maria Valley  
Re: Mulching rangelands for carbon storage.  
Date: 9/21/17

The idea of increasing the carbon stored in working rangelands by applying compost is untested in the complex and diverse soil types in Santa Barbara County from the Carrizo Plain, to Cayama Valley uplands, to the Santa Maria foothill county, or the Orcutt Hill oak woodlands. The information provided indicated that the studies of Marine County rangelands, with totally different soil and weather conditions are not applicable to our situation. The Midwest study, in a moist area of moderate rainfall, is also not applicable. Much more scientific study needs to be completed to establish the project goal and before considering this as a viable option. There must be careful study as to the desirable plant community to be established, not just accepting increasing the percentage of plant cover by introducing non-native forage species.

My initial review of potential negative impacts from mass mulching of rangelands leads me to believe that a more ecologically sound approach for our area would be changing management practices to achieve better carbon sequestration for rangelands by grazing to provide a greater native plant cover.

Your document shows trucks dumping dark brown mulch on lands being grazed. Applying a mulch initially darker than the native soil color, in itself will create climate temperature impacts that need to be addressed. For example, black pavement is being replaced in some "green" communities by light colored pavement or white toppings products because it is one of the main contributions to the urban heat island effect. The lighter colored pavements can be up to 30-40% cooler on a hot sunny day. What will be the climate impact of creating acres of darker landscape?

Adding a mulch layer could negatively impact the county's existing rangelands biological soil crusts, increase soil temperature, create undesirable and detrimental nutrients, reduce plant flowering, impact seed germination, negatively change species composition, potentially alter rangeland ability to carry fire, reduce seedling survival rates, impact plant growth, created problems for burrowing and ground dwelling animals, eliminate habitat for important native ground dwelling insects and including key pollinators and recyclers, , possibly inhibit water percolation into the soil, eliminate habitat for ground nesting and ground feeding birds,

eliminating habitat for ground burrowing and ground dwelling reptiles, potentially trap moisture and create plant root rot etc.

The process of mass mulching of the county's complex rangelands ecosystems is much different than mulching croplands that are plowed and disturbed multiple times a year and do not have living soil crusts, established plant communities, populations of beneficial insects, or provide habitat for numerous animal species.

Please contact the Community Environmental Research Project of the Santa Maria Valley if you would like examples of the issues discussed above.

Sincerely,



Jane Baxter