

To: Santa Cruz City Council  
Re: Carbon Impacts and Heritage Tree Ordinance Revisions  
September 23<sup>rd</sup>, 2013

Dear Council members:

Depending on size and species, mature heritage trees store, on average, 1-2 metric tons of C. Additionally, depending on placement, such trees can help avoid emissions of additional carbon due to protection of living and commercial structures from wind and through moderating temperature variations. Although it is impossible to calculate exact values for carbon stored in Santa Cruz heritage trees without extensive scientific analysis, the 170 trees removed last year likely constitute a C pool of anywhere between 100 and 300 metric tons of C, which is equivalent to annual emissions of anywhere between 20 and 60 cars. Since 1995, over 4,000 heritage trees have been removed in the City of Santa Cruz, constituting a carbon pool that is, at least, equivalent to annual emissions of almost 1,000 cars. Since the fate of most of these trees is to be disposed of by chipping, the vast majority of this carbon is released to the atmosphere within 5 years. Current re-planting policies and regulations do not ensure that the substantial carbon sink that heritage trees constitute is replenished by replanting sufficient densities of trees of comparable carbon storage capacity. Furthermore, in order for newly planted trees to become equivalent carbon sinks, several decades of growth are required. Therefore, if the City is serious about its commitments to reduce climate change impacts, the current policies regarding heritage trees need to be strengthened, not relaxed, in order to limit additional emissions of greenhouse gases. Alternatively, the city should significantly alter the replanting policies, ensuring that trees that get planted after harvest have the biological potential to replace the carbon storage capacity of trees that are removed. That will require at least a 3X multiplier on the number of trees planted for every tree harvested, and replanting of trees that are functionally similar to trees that are removed (i.e. trees that usually reach the same diameter and height as removed trees).

In sum, the proposed ordinance changes may have a significant impact on greenhouse gas (c) emissions and levels which should be analyzed.

Alexander Gershenson, PhD  
CEO, EcoShift Development  
Principal, EcoShift Consulting  
831-824-4326

