CARBON SEQUESTERED IN THE TREES ON A UNIVERSITY CAMPUS

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ABSTRACT
We investigate the ability of a New Zealand university to rely on the CO2 sequestered in the trees on campus to mitigate the CO2 emissions caused by operations. We count and measure the trees on the university’s 68 hectare main campus, ignoring smaller trees that sequester very little CO2. We estimate that the 4,139 trees we count contain 5,809 tonnes of CO2. We further estimate the additional CO2 sequestration over the next 10 years to be 253 tonnes per year. The university’s annual CO2 emissions were 4,086 tonnes in 2011. More than 70% of this amount relates to overseas travel. Therefore, CO2 sequestration in trees promises to mitigate only about 6% of total emissions over the next 10 years. This suggests that other initiatives will be needed if the university is serious about reducing its greenhouse gas emissions impact. An obvious avenue appears to be to reduce overseas travel, e.g., by finding different ways for academic staff to network and obtain feedback on their research. Other universities and other organisations starting to investigate their environmental impact are likely to similarly find that CO2 sequestration in trees can only provide limited mitigation opportunities.

Keywords: carbon sequestration, carbon emissions, climate change