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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