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STUDY ON CARBON SEQUESTRATION POTENTIAL OF THE DOMINANT TREE SPECIES ALONG ALTITUDINAL GRADIENT IN THE FORESTS OF GARHWAL HIMALAYA.

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ABSTRACT

Carbon sequestration potential of dominant tree species along an altitudinal gradient of 600 to 2300 m amsl in forests of Garhwal Himalaya was carried out during the period of 2009 to 2012. *Shorea robusta* was found to be dominant at lower region (600 to 1200m), *Quercus leucotrichophora* at middle region (1200 to 1800m) and *Pinus roxburghii* at higher region (1800 to 2300m). Annual increment of the biomass for the main axis of the selected tree species was calculated and a 50% value of the annually increased biomass was taken as carbon. The present study showed the dominance of *Pinus roxburghii* in terms of carbon sequestration (1.20 t ha^{-1} yr^{-1}) followed by *Quercus leucotrichophora* (1.15 t ha^{-1} yr^{-1}) and *Shorea robusta* (0.77 t ha^{-1} yr^{-1}). The present study indicates the importance and thus the protection of the *Pinus* forests in terms of their role as an efficient natural scrubber of atmospheric carbon dioxide which becomes essential to neutralize the radiative forcing of the increased environmental concentration of carbon dioxide and thus to reduce the global warming.

Key words: Carbon sequestration, Ecosystem, Biomass, Global warming, Radiative forcing.

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