

## **How Forest Management Can Improve Carbon Sequestration, Carbon Stock and Other Ecosystem Services? A Focus on Mediterranean Environment**

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**Abstract:** Forests play a crucial role in mitigating climate change by sequestering carbon and providing various ecosystem services. This contribute explores the relationship between forest management practices and their impacts on carbon sequestration, carbon stock, and other ecosystem services, with a specific focus on the unique challenges and opportunities presented by Mediterranean environments. Drawing from a synthesis of existing research, I discuss the effectiveness of different forest management strategies in enhancing carbon sequestration and carbon stock while considering the broader ecosystem services provided by Mediterranean forests. I also include a case study on thinning in peri-urban forest stand, highlighting its potential to enhance carbon sequestration and ecosystem services in Mediterranean peri-urban areas. I underline the importance of sustainable forest management practices in mitigating climate change and supporting biodiversity conservation in this ecologically sensitive region. Furthermore, we identify key knowledge gaps and research priorities to guide future efforts in optimizing forest management for both carbon sequestration and ecosystem resilience in Mediterranean environments.

**Keywords:** Climate change, Forest ecosystems, Mediterranean forests, Mitigating.