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VALUING ECOSYSTEM SERVICES OF CHILEAN TEMPERATE RAINFORESTS

Abstract

The Valdivian Rainforest Ecoregion (35°–48° S) in southern South America is among the ecosystems with highest conservation priority worldwide due to its rich diversity, degree of endemism, and critical conservation status. Temperate rainforests in this vast area are essential as source of biological resources and to maintain different ecosystem services which remain largely unmeasured and unvalued. Consequently, the benefits they provide are not reflected in decision-making regarding forest management and conservation. Based on existing studies and results from ongoing research we describe selected ecosystem services and provide estimates of their economic value. Timber benefits for secondary forests expressed as net present stumpage values were US\$ 3742 ha⁻¹ and US\$ 3093 ha⁻¹ for sustainable forest management (SFM) and unsustainable harvesting, respectively. Timber benefits for old growth forests equaled US\$ 4546 ha⁻¹ and US\$ 5718 ha⁻¹, for SFM and unsustainable harvesting, respectively, using an 8% discount rate. Annual benefits from recreation were US\$ 1.6 ha⁻¹ and US\$ 6.3 ha⁻¹ for the two most important national parks located in the study area. The annual value of maintaining soil fertility was US\$ 26.3 ha⁻¹ using the replacement cost of nutrient losses due to soil erosion. The annual economic value of water supply for human consumption using the production function method was US\$ 235 ha⁻¹. These results provide valuable information on the kind and magnitude of values that could be relevant in decision-making concerning conservation and management of native forests in the Valdivian Rainforest Ecoregion.



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