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Existing Supply of Watershed Services in the Panama Canal Watershed

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Summary

Markets for ecosystem services are gaining the interest of both entrepreneurs and environmentalists as a way to further environmental protection and conservation goals while turning a profit for investors and land managers. The Panama Canal Watershed is currently struggling with the effects of land use change on its water quality and quantity. This paper examines two types of land management in the Panama Canal Watershed (large-scale reforestation with native species and smallholders' agroforestry projects) to analyze the supply side of a possible market for watershed services. Forest cover provides the following watershed services: (1) regulates water flow by controlling flooding and peak flows, and possibly increasing dry season flows; and (2) improves water quality by increasing dissolved oxygen levels and reducing erosion, sedimentation, pathogens, eutrophication, and chemical contaminant

loading. Based on the research presented in this paper, large-scale reforestation may not be desirable in the Panama Canal Watershed unless decreased water yield is an acceptable outcome or improved dry season flows can be shown. Consequently, this paper concludes that efforts to develop markets for watershed services in the Panama Canal Watershed should focus on smallholders and water quality improvement, at least until scientists agree that increasing forest cover increases dry season water yield.

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Key Words

- Watershed services,
- ecosystem services,
- hydrological services,
- Panama Canal Watershed

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