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**Title:** Water Management and the Valuation of Indirect Environmental Services

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**Abstract:**

This article focuses on establishing a model to value indirect environmental services that maintain the water resources, particularly in watershed areas that contribute to aquifer recharging. In this sense, the risk of watershed degradation weighed against the level of effort toward conservation should be considered as part of the value of the aquifer. Three levels of indicators are used, depending on the scope, from an individual project to the water sector itself and how the water sector interacts with the whole economy. The article uses the Pearl Harbor/Ko'olau watershed in Hawaii to illustrate the model.

This study finds that forested watershed areas are more valuable because they have more positive benefits to turning rainwater into new groundwater to recharge the aquifer. In the Hawaii example, the conservation of the forested watershed is the best way to avoid depreciation in value and proves to be worth the investment. The valuation of the water in the aquifer is linked to watershed management, creating an interdependent relationship to create full value. Meanwhile, environmental degradation without regard to its effect on aquifer recharge rates will exasperate the problem and lead to future losses for Hawaii's economy.

**\*Abstract author note: The message of this article is good: maintain the natural environment because of the practical service it provides. However, the relevance to this particular study is minimal and this article is written in extremely technical and inaccessible language.**