

## **Community Education for Watershed Management.**

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**Abstract:** Accelerated sedimentation from the unprotected watershed of southern Guam is a growing economic and environmental concern for the island. When soil is disturbed sediments are moved by water and wind into rivers that empty into the ocean. The reefs located near the mouths of these rivers are smothered by the settling sediments, killing microbial organisms, and making our reefs uninhabitable. However, watersheds are by design dynamic and adaptable to change. The natural results of such adaptations are more often incompatible with human land use. Human activity such as the use of off road vehicles, frequent hiking from unprotect upland areas, clear cutting, etc., however often has a strong impact on watershed dynamics in one form or another. One factor that can aid in the preservation and increase of habitats through the revegetation or reforestation of watershed systems that have become barren are not only actions upon the watershed itself, but on the human impact on such systems. Such changes to human activity may include education of the public on the natural resources, but reaches deeper into the need to instill a conscious effort to reduce negative impacts on the environment and promote community driven actions to improve the environment. This education of the community includes the collection of information available about nearby watershed systems and the ability to describe the improvements that preservation efforts are making. For this purpose, we have developed a topographical model of the island of Guam in which watershed features as well as limestone landscape of southern and northern Guam are presented in a small scale model at the UOG campus. The model is surrounded by a moat representing the ocean and it is also equipped with rainfall simulators for creating local, as well as island-wide rainfalls with control time lapse for simulating the island's rainfall patterns. Also, a number of toy size off-road vehicles are being introduced to certain areas where unprotected soil is disturbed and made susceptible to soil erosion and sedimentation. In this educational model, runoff is being directed to streams and rivers which carry the sediments straight to the ocean presenting murky water at the shorelines in order to demonstrate the immediate impact of disturbances (i.e. off-roading) on the watershed and consequences on the ocean water. The model as well as the impact of the demonstration will be presented in this paper.

**Key words:** Watershed management, Soil Water Erosion, Off-Road Vehicles, Habitat Preservation, Guam.