

Impacts Case Study - Hawaii
 (comparison of effect of benchmark and treatment)
Conservation Effects Worksheet
Cropland - Pineapple
 (land use and crop)

Resource Setting: Oahu, Hawaii

Pineapple lands are located in the central Oahu plateau, between Koolau and the Waianae mountain ranges. The annual rainfall is between 35 and 50 inches. The elevation ranges from 500 to 1200 feet. The Kunia, Kolekole, and Wahiawa series are the major soils found in this resource area. These are made up of silty clays and silty clay loams. The slopes range from 0 to 8%

Conservation Treatment Options:

- | | |
|--------------------------------------|-----------------------------------|
| Access Roads (560) | Terraces (600) |
| Crop Residue Use (344) | Grassed Waterway (412) |
| Conservation Cover (327) | Sediment Basin (350) |
| Conservation Cropping Sequence (328) | Irrigation Water Conveyance (428) |
| Nutrient Management (590) | Irrigation Water Management (449) |
| Pest Management (595) | |

Resource Problems Before Treatment:

Erosion occurs from overland flow of water. This creates sheet, rill, and gully erosion. Wind erosion occurs to a minimal extent. The location of aquifers and surface flows leads to potential contamination of ground water and receiving waters. The Kaiaka Waialua HUA and the Pearl Harbor HUA both contains pineapple in their watersheds. Availability of water limits acreage being irrigated.

IMPACTS	DECISIONMAKERS EVALUATION	
	(+ / -)	Comment
<p>Sheet and rill erosion reduced by 14 tons per acre.</p> <p>21,820 feet of terraces installed.</p> <p>Reduces erosion from 17.39 to 13.8 tons per acre per year</p> <p>3,000 lbs of crop residue applied per acre. Reduce erosion from 13.8 to 11.8 tons per acre per year.</p> <p>Cover crop of 80% volunteer reduces erosion from 11.8 to 7.8 tons per acre per year</p> <p>Installation of grassed waterway reduces erosion from 7.8 to 8.8 tons per acre per year.</p> <p>Combination of sediment basins, access roads, and conservation cropping sequence reduces erosion from 5.8 to 4.8 tons per acre per year</p> <p>Irrigation water conveyance system of PVC pipeline as opposed to furrow irrigation increases the water efficiency from 40 to 70 percent</p> <p>Nutrient management has a goal of decreasing the amount of nutrients used and leaving the field surface by 4 percent</p> <p>Pest Management has a goal of decreasing the amount of pesticides used and leaving the field by 4 percent</p> <p>Overall resource management plan has a goal of minimizing the impairment of the wildlife and the environment from adverse agriculture effects. Emphasis is placed on achieving a balance between economic prosperity and ecological sustainability. Extensive consideration is given to reducing offsite effects from the pineapple operation. Areas of consideration include plants, animals, water, air, soil, and people.</p>	<p>+</p>	<p>Land Manager's comments:</p> <p>All positive responses were given without regard for cost of installation and maintenance. No industry or small farmer wants to contribute to the degradation of the environment. However, is the farmer expected to shoulder the entire cost of protecting the environment. The soil conservationist must come to a compromise as to what can feasibly be installed with the time, money and resources at hand. A resource management plan should contain the ideal set of practices that are needed to bring the impairment of the area to a minimum.</p>
<p>Comments:</p>		