AN ENVIRONMENTAL ASSESSMENT SURVEY FOR THE AMERICAN SAMOA COASTAL MANAGEMENT PROGRAM

Prepared and submitted by Ethan Taylor, Technical Assistant
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September 1997

Submitted to Lelei Peau, Manager
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Department of Commerce

Produced under a technical assistance grant to the
Micronesia and South Pacific Program, University of Oregon
from the United States Department of Interior
Office of Territorial and International Affairs
ACKNOWLEDGMENTS

My time in American Samoa, albeit brief, has been truly rewarding. In addition to making a lot of new friends, I have learned a great deal about the fa'a Samoa, or Samoan way. Indeed, the daily interactions with each of you has served to enrich my understanding and appreciation of the Samoan culture. I would like to give special thanks to the following people for their selfless generosity, patience, support, and friendship:

American Samoa Coastal Management Program/Department of Commerce

Apelu Aitaoto                      Community Liaison Officer
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Moira Manea

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Epi Suafo'a
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Volunteer

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Maradel Gale
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Director
Program Manager
EXECUTIVE SUMMARY

This report summarizes the findings of an environmental assessment survey designed and conducted by Ethan Taylor, a Technical Assistant (TA) from the University of Oregon, and by Lance Tauoa and Misipati Salama, two local counterparts who worked with the TA throughout the duration of the project. The purpose of the survey was to help the American Samoa Coastal Management Program (ASCMP) with its environmental education efforts. Ideally, the results of the survey will be used as a tool for conservation in future public awareness campaigns.

A total of 1,000 surveys were distributed to Samoans from 50 villages across the Territory during a three-week period in August. Of these surveys, 656 were completed and returned to the TA. This represents a response rate of approximately 66 percent, or about two-thirds of all surveys that were originally distributed. Respondents could choose to fill-out either the Samoan or the English version of the survey. A total of 206 respondents, or 31 percent, chose to fill-out the Samoan version while 450 respondents, or 69 percent, chose the English version. A total of 379 women, or 58 percent, and 277 men, or 42 percent, participated in the survey.

Overall, it was found that the vast majority of the respondents surveyed believe that America Samoa’s environmental problems are either serious or very serious in nature. The participants were then asked whether or not they felt ASCMP was doing an effective job of meeting its goal “to provide effective resource management by protecting, maintaining, restoring, and enhancing the resources of the coastal zone.” A total of 357 respondents, or 55 percent, agreed that ASCMP was indeed doing an effective job. Those who disagreed or who were not sure were asked to offer suggestions and recommendations to help ASCMP better protect Samoa’s natural resources. These recommendations can be found on page 45. Finally, respondents were asked what they thought they could do to better protect Samoa’s natural resources. These thoughts can be found on page 46.
In addition to documenting the results of the environmental assessment survey, the TA was responsible for the following two secondary projects:

- Assisting Le Tausagi with each of its four Enviro-Discoveries Summer Camps.
- Editing the "Surfing the Coast" Activity Guide.

The purpose of Enviro-Discoveries summer camps was to provide children with a unique opportunity to learn about their natural environment. By incorporating the fa'a Samoa, or the Samoan way, into each of the hands-on activities, the young participants gained a newfound appreciation and respect for America Samoa's fragile ecosystems. Upon completion of the camps, the TA made and submitted a series of recommendations to Le Tausagi. A copy of these recommendations can be found on page 62 of the appendix at the back of this report.

The "Surfing the Coast" activity guide will be used in elementary schools across American Samoa. Through a series of games, puzzles, and other fun activities, the guide provides a basic introduction to many of the environmental issues facing American Samoa today. A copy of the activity guide is located at the end of the aforementioned appendix.
INTRODUCTION

University of Oregon Micronesia and South Pacific Program

The University of Oregon Micronesia and South Pacific Program (MSPP) provides grassroots technical assistance to various government agencies and nonprofit organizations in the Federated States of Micronesia (including Kosrae, Pohnpei, and Yap), American and Western Samoa, the Republic of Palau and the Marshall Islands, and the Commonwealth of the Northern Mariana Islands. MSPP also hopes to expand its program to the Philippines in the near future.

By engaging graduate students from a variety of fields (including planning, education, resource management, public policy, and architecture) to serve as Technical Assistants (TA’s), the MSPP program emphasizes the transfer of skills between TA’s and local Micronesian and South Pacific counterparts. Finally, in addition to hands-on international work experience, the MSPP program affords its TA’s the unique opportunity to understand and appreciate foreign countries in a cross-cultural context.

American Samoa Coastal Management Program

American Samoa’s growing population, coupled with an ever-expanding economic base, has placed a strain on not only its traditional communal and subsistence society, but also on its coastal resources. Indeed, the entire Territory is currently experiencing a myriad of environmental problems including soil erosion, loss of wetlands, water pollution, reef destruction, and encroachment from relentless development. Because the majority of Samoans live and work near the coastline, it is essential that we protect and preserve these natural resources.
In response, the American Samoa Coastal Management Program (ASCMP) was established in 1980 under the Federal Coastal Zone Management Act (CZMA), a voluntary, federally funded program created to promote the management and protection of individual states, territories, and commonwealths. Governed by the American Samoa Coastal Management Act of 1990, the Department of Commerce, formerly known as the Economic Development and Planning Office (EDPO), is responsible for directing all of American Samoa's territorial agencies to act consistently within the policies set forth by ASCMP. Since 1980, ASCMP has developed innovative regulatory and community based approaches to achieve its mission of providing "effective resource management by protecting, maintaining, restoring, and enhancing the resources of the coastal zone." A complete list of ASCMP mandates can be found on page 55 of the appendix.
PROJECT BACKGROUND

To date, ASCMP, together with MSPP, has developed two manuals to side in its environmental education program:

- A Three Year Environmental Education and Awareness Plan.
- An Implementation of the Three Year Environmental Education and Awareness Plan.

ASCMP has used these manuals to help guide its education efforts. One of the plan's recommendations was to conduct a survey to identify the most critical environmental problems, both real and perceived, on the island. The survey form, developed in 1994 by TA Kathy Roos, was completed by a limited number (n=244) of respondents in 1995. Results and analysis of this survey were recorded in TA Linda Rose's 1995 implementation plan.

Once the environmental problems had been identified, it was important to look at possible solutions. As a result, ASCMP recommended that a follow-up environmental assessment survey be conducted by TA Ethan Taylor. More specifically, ASCMP wanted objective input from community members and other local factions on the island (including youth groups, churches, schools, village councils, etc.) that were not directly affiliated with ASCMP or other governmental agencies that deal with environmental issues. This input was subsequently analyzed by the TA and will be used as a tool for conservation in the planning and implementation of future environmental education and public awareness campaigns. Because opinions can (and invariably do) differ widely, the survey was distributed to a variety of people from different age groups, ethnicities, professions, religions, and socio-economic backgrounds.
METHODOLOGY

In order to meet the goals of this project, the following methodologies were employed by the TA:

- Conducted background research on project.
- Familiarized himself with the goals and objectives of ASCMP.
- Become acquainted with the staff of ASCMP.
- Established and maintained contacts within the environmental community (i.e. Le 'aua'o, American Samoa Environmental Protection Agency, American Samoa Community College/Land Grant Program, Department of Marine and Wildlife Resources, Fagatolé Bay National Marine Sanctuary, United States National Park Service, etc.).
- Met with supervisor and counterpart(s) on a regular basis.
- Read and reviewed Don Dillman's book entitled, "Mail and Telephone Surveys: The Total Design Method."
- Devised survey.
- Submitted survey to ASCMP for review and final approval.
- Distributed survey with the help of the previously-established contacts.
- Collected survey.
- Analyzed and wrote-up results of survey in final report.
CURRENT STATUS OF THE ENVIRONMENT IN AMERICAN SAMOA
Garbage

In 1990, American Samoa generated approximately 25,534 tons of solid waste (Department of Urban and Regional Planning, 1996). This estimate is based on a generation rate of three pounds of trash per person, per day with a 1990 census population of 46,638. If the population growth rate continues to increase at its current 3.7% per year, it is estimated that waste volume will be over 36,500 tons per year by 2001 (see Figure 1). Unfortunately, much of this waste never makes it to the Futiga landfill, which, incidentally, is expected to reach maximum capacity in only five years (Craig, 1994). Instead, it is carelessly thrown on the ground or dumped into local streams, only to be swept out to sea each time it rains.

Figure 1. Solid Waste Generation in Tons in American Samoa
Toxic Fish

Recent studies have shown that fish caught in Pago Pago Harbor are seriously contaminated with lead, mercury, PCB's, pesticides, and other toxic substances. A health risk analysis conducted by the American Samoa Environmental Protection Agency (ASEPA) indicates that current concentrations of lead in Pago Harbor are reaching levels that can permanently reduce the intelligence of children who regularly consume 3-4 meals of harbor fish per week (ASEPA, 1991). According to the same study, the sources of toxic pollutants, including oil, car batteries, and paint chips, are thought to be a direct result of the gradual accumulation of contaminants from various industrial, residential, and military uses over the past century.
Air Pollution

As the number of registered vehicles on the island continues to increase exponentially (see Figure 2), so too does the amount of carbon monoxide and other toxic substances that spew from thousands of tailpipes across the Territory. The tuna canneries, located in Pago Pago, also contribute to the problem by belching out foul-smelling contaminants. Finally, it is commonplace for Samoans to burn their own trash, regardless of its content. In addition to paper and yard waste, smoldering tires, diapers, cafés, bottles, and batteries release harmful pollutants and other particulate matter into the atmosphere on a regular basis.

Figure 2. Total Vehicles Registered In American Samoa
Water Pollution

Both point and nonpoint source pollution pose a serious threat to coastal waters across the Territory. Nonpoint source pollution refers to a pollutant that enters a body of water as a result of water flowing over the surface of the land, such as rainfall or irrigation. Common nonpoint source pollutants include soil, fertilizer, animal waste, oil, grease, garbage, and lawn clippings. In contrast, point source pollution is water pollution that results from a discrete point such as a pipe, ditch, channel, or tunnel. Examples of point source pollution in American Samoa are the tuna cannyry pipelines, which dump large amounts of fish waste into the outer harbor and adjacent waters, and the Utulei sewage treatment plant outfall which also discharges into Pago Pago Harbor. Unfortunately, most of the villages around the island are not on the sewage line (Green, 1995); as a result, untreated sewage, including waste from piggeries, seeps out into the sea, upsetting the nutrient balance on the coral reefs.
Deforestation

Due to its relatively small size and extreme topography, American Samoa has been spared from the onslaught of commercial logging interests that have ravaged the tropical forests of other South Pacific island nations. Indeed, the portion of Tutuila’s rainforest that grows on steep mountain slopes and peaks is unlikely to succumb to the ax in the near future. Nonetheless, the lowland forests that once covered much of the Tafuna floodplain, together with the coastal scrub areas that once harbored wildlife driven from storm-damaged mountain forests, have been almost completely cleared for housing developments and other commercial endeavors (Trail, 1995).

The magnificent banyan tree (no'a), or strangler fig, has also suffered considerably. An important source of food and shelter for a myriad of wildlife, many banyans were severely damaged in Hurricanes Ofa and Val. Many others have been indiscriminately cut down to make room for houses, roads, taro plantations, and industrial parks. Still others have been converted into huge garbage dumps, their hollow trunks filled with mounds of dirty diapers and rusting appliances.
Destruction of Coral Reefs

One of the most critical environmental problems facing American Samoa today is the damage to its coral reefs. Coral reefs are important for a number of reasons. First, they provide 50-70 percent of all fish caught in Samoan waters (Craig, 1994). Second, they help to protect villages and island infrastructure from storm erosion. Lastly, they offer an untapped and potentially lucrative source of much-needed ecotourism revenue.

During the past two decades, Samoa's coral reefs have been seriously degraded by both natural and manmade disturbances. In the late 1970's, millions of hungry crown-of-thorns starfish invaded Samoa's waters, stripping away as much as 80 percent of the live coral around Tutuila (Green, 1995). Hurricanes Ofa and Val also caused a tremendous amount of damage to the reefs, killing off most of the live coral down to a depth of 30-40 feet. In 1994, water temperatures around Samoa were unusually warm, badly stressing or "bleaching" the tiny polyps that form the reefs. As a result of this increase in water temperature, an estimated 80 percent of the live coral in some places on Tutuila was bleached. Tragically, much of this coral has subsequently died.

Living coral is especially susceptible to manmade pollution. For example, each time it rains, large amounts of sediment, animal waste, untreated sewage, and trash wash out into the ocean, settling over the fragile and slow-growing reefs like a huge blanket. This blanket prevents sunlight and clean water from reaching the corals, seriously hindering their ability to recover from the aforementioned natural disasters.

![Coral Reef Image](image-url)
Soil Erosion/Runoff

Both soil erosion and run-off are serious problems in many areas of the Territory. Indeed, in 1990, the American Samoa Shoreline Survey identified 77 problem areas (Department of Urban and Regional Planning, 1996). Of these, 25 were considered areas of "critical erosion", totaling more than 20,000 feet of shoreline (see Figure 2a). The threat of landslides has also increased as a result of soil erosion, with twelve major slides occurring on Tutuila in 1990 alone. Beaches and coastlines continue to erode away as riparian vegetation is cleared to make room for development projects. Finally, sedimentation from soil erosion and agricultural runoff is literally smothering what little remains of American Samoa's coral reefs.

Figure 2a. Landslide Hazard Zones: 1990; Areas of Severe Coastal Erosion: 1991
Overpopulation

With an annual rate of increase of 3.8 percent, American Samoa has one of the fastest growing populations in the world (see Figure 3). (To put matters into perspective, the world's population is increasing at a rate of 1.8 percent per year.) As of July 1, 1995, there were approximately 55,000 people living in the Territory, up almost 2,000 from the previous year (Economic Development Planning Office, 1996). The vast majority (90 percent) of these new people are dependents (i.e. young children) who pay no taxes but who still require a vast array of costly public services.

It is expected that Samoa’s current population will double in less than 20 years, surpassing the 100,000 mark by the year 2011 (see Figure 4). Rising steadily since the 1930’s, the Territory’s population density was calculated at 234 residents per square kilometer in 1990. However, this figure is based on Samoa’s total land area and not on the land that is suitable for development (land that has a slope of less than 30 percent). Because two-thirds of Tutuila is steeply sloped and not suitable for human habitation, the population density in 1990 was actually 1,093 people per square kilometer.

Figure 3. World Growth Rates

![Graph showing world growth rates with American Samoa as the highest growth rate.](image)
Global Warming

Air temperatures in American Samoa have increased steadily over the past 15 years (see Figure 5). Whether or not this trend can be attributed to global warming is still uncertain. What is certain, however, is that temperatures in American Samoa are now about one degree Fahrenheit warmer than they were just 10-20 years ago (Craig, 1992). Although this may not seem like much of an increase, the global implications could be quite significant. Scientists warn that the effects of global warming, thought to be caused by industrial pollution and the burning of unprecedented amounts of fossil fuels, could have the following repercussions for the Territory:

- an increase in coastline erosion, necessitating costly road repair and coastal shoreline stabilization projects.
- an increase in the frequency and intensity of hurricanes in the area.
- an increase in the amount of saltwater that seeps into underground aquifers.
- an increase in water temperatures, affecting many species of fish and coral.
- an increase in food prices, as the world's current agricultural areas become unsuitable for farming.

Figure 5. Climate Change In American Samoa
Overfishing/Overhunting

Overfishing has been a serious problem for many of America Samoa's reef animals, especially its giant clams (faisua) and sea turtles (laumel). Both of these species have been heavily overfished and are now present in very low numbers in the Territory. In fact, one of the three clam species found on Tutuila has already gone extinct due to overfishing (Green, 1995).

Overhunting, together with Hurricanes Ofa and Val, has caused fruit bat or flying fox numbers to crash by as much as 90% in recent years (Craig, 1992). For example, the white-napped or Tongan fruit bat (pe'a faisua) population plummeted from about 12,000 individuals in 1987 to only 1,500 in 1992 (see Figure 6). The Samoan fruit bat (pe'a vao) has fared even worse, with only 200-400 individuals surviving on Tutuila Island.

Many of American Samoa's bird populations, including the people-capped fruit dove (manutagi), the Pacific pigeon (lupe), and the rare many-colored fruit dove (manums), are also facing a precipitous decline in numbers. Again, this decline can be partially attributed to overhunting. Indeed, until a ban on all hunting was instituted in 1992, hunters shot as many as 3,200 Pacific pigeons, 1,600 fruit bats, and 800 fruit doves per year.

Figure 6. Fruit Bat Population: 1987-1992
Loss of Wetlands

Offering a wide range of valuable functions and ecosystem services (see list below), wetlands are special habitats that are especially susceptible to human disturbances. According to recent statistics, most of American Samoa’s wetlands have experienced some degree of loss (Department of Urban and Regional Planning, 1996). Since 1961, the total wetland area on Tutuila has been reduced by 23 percent, or 137 acres (see Figure 7). This figure represents an annual rate of decline of about 4.57 acres.

Without a doubt, the primary cause of wetlands loss is urban growth and development, fueled on by a population that continues to increase at 3.8 percent per year. Wetlands are cleared and filled to make room for village housing, livestock, commercial buildings, and plantations. Pollution resulting from trash, piggyries runoff, and other upland development activities poses an additional threat.

Cultural forces also compound the problem. Under the Samoan land tenure system, wetlands are perceived as village owned land. Indeed, Samoans see the use of their land as subject to decisions of their matai and village councils, not the federal or territorial government. Consequently, they often bypass or compromise ASCMP’s land use permitting process.

A partial list of wetlands functions:

- provide refuge and habitat for a myriad of native fish, shellfish, birds, animals, and plants.
- possess a high recreational and educational value.
- collect and store fresh water, helping to recharge depleted underground aquifers.
- prevent the intrusion of salt water, offering increased opportunities for agricultural production.
- control and reduce the impact of floods by absorbing and slowly releasing floodwaters.
- protect corals by trapping sediments that would wash onto offshore reefs, destroying them in the process.
References


Department of Urban and Regional Planning (University of Hawai‘i at Manoa). 1996. *American Samoa Coastal Management Program: A Case Study on Alternative Management Strategies*. Funded by the Pacific Sea Grant Program under Grant No. NA 36EG0507.


### Soil Erosion/Runoff

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<td>195 (30%)</td>
<td>111 (17%)</td>
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<tr>
<td>Men</td>
<td>129 (47%)</td>
<td>75 (27%)</td>
<td>46 (17%)</td>
<td>18 (07%)</td>
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<tr>
<td>Women</td>
<td>171 (45%)</td>
<td>120 (32%)</td>
<td>65 (17%)</td>
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### Overpopulation

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<td>288 (44%)</td>
<td>140 (21%)</td>
<td>120 (18%)</td>
<td>80 (12%)</td>
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<tr>
<td>Men</td>
<td>131 (47%)</td>
<td>52 (19%)</td>
<td>53 (19%)</td>
<td>26 (09%)</td>
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<tr>
<td>Women</td>
<td>157 (42%)</td>
<td>88 (23%)</td>
<td>67 (18%)</td>
<td>54 (14%)</td>
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### Global Warming

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<tr>
<td>Total</td>
<td>171 (26%)</td>
<td>208 (32%)</td>
<td>160 (24%)</td>
<td>87 (13%)</td>
</tr>
<tr>
<td>Men</td>
<td>79 (29%)</td>
<td>83 (30%)</td>
<td>65 (24%)</td>
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<tr>
<td>Women</td>
<td>92 (24%)</td>
<td>125 (33%)</td>
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### Overfishing/Overhunting

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<td>Total</td>
<td>255 (39%)</td>
<td>184 (28%)</td>
<td>146 (22%)</td>
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<tr>
<td>Men</td>
<td>106 (38%)</td>
<td>72 (26%)</td>
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<tr>
<td>Women</td>
<td>149 (39%)</td>
<td>112 (30%)</td>
<td>79 (21%)</td>
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### Air Pollution

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<td><strong>Total</strong></td>
<td>213 (48%)</td>
<td>14 (7%)</td>
<td>72 (11%)</td>
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<tr>
<td><strong>Men</strong></td>
<td>120 (43%)</td>
<td>56 (20%)</td>
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<tr>
<td><strong>Women</strong></td>
<td>193 (51%)</td>
<td>58 (15%)</td>
<td>35 (9%)</td>
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### Water Pollution

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<td><strong>Total</strong></td>
<td>294 (45%)</td>
<td>112 (17%)</td>
<td>34 (5%)</td>
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<tr>
<td><strong>Men</strong></td>
<td>115 (42%)</td>
<td>41 (15%)</td>
<td>20 (7%)</td>
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<tr>
<td><strong>Women</strong></td>
<td>179 (47%)</td>
<td>71 (19%)</td>
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### Deforestation

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<td><strong>Total</strong></td>
<td>198 (30%)</td>
<td>147 (22%)</td>
<td>65 (10%)</td>
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<td><strong>Men</strong></td>
<td>88 (32%)</td>
<td>74 (27%)</td>
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<tr>
<td><strong>Women</strong></td>
<td>110 (39%)</td>
<td>73 (19%)</td>
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### Destruction of Coral Reefs

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<td><strong>Total</strong></td>
<td>306 (47%)</td>
<td>96 (15%)</td>
<td>41 (6%)</td>
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<tr>
<td><strong>Men</strong></td>
<td>128 (46%)</td>
<td>44 (16%)</td>
<td>15 (6%)</td>
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<tr>
<td><strong>Women</strong></td>
<td>178 (47%)</td>
<td>52 (14%)</td>
<td>26 (0%)</td>
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Air Pollution

Total (n=655)

Not Serious
17%

Somewhat Serious
18%

Very Serious
48%

Serious
23%

Men (n=277)

Not Serious
14%

Somewhat Serious
21%

Very Serious
43%

Serious
22%

Women (n=379)

Not Serious
9%

Somewhat Serious
15%

Very Serious
22%

Serious
24%
Deforestation

Total (n=656)

- Very Serious: 46%
- Serious: 31%
- Somewhat Serious: 15%
- Not Serious: 0%

Men (n=277)

- Very Serious: 47%
- Serious: 31%
- Somewhat Serious: 19%
- Not Serious: 0%

Women (n=379)

- Very Serious: 49%
- Serious: 31%
- Somewhat Serious: 14%
- Not Serious: 7%
Overpopulation

Total (n=658)

- Not Serous: 13%
- Somewhat Serous: 19%
- Serious: 22%
- Very Serous: 46%

Men (n=277)

- Not Serous: 10%
- Somewhat Serous: 20%
- Serious: 20%
- Very Serous: 60%

Women (n=372)

- Not Serous: 15%
- Somewhat Serous: 18%
- Serious: 24%
- Very Serous: 43%
Global Warming

Total (n=556)

- Very Serious: 27%
- Serious: 33%
- Somewhat Serious: 20%
- Not Serious: 14%

Men (n=277)

- Very Serious: 30%
- Serious: 32%
- Somewhat Serious: 25%
- Not Serious: 13%

Women (n=378)

- Very Serious: 25%
- Serious: 34%
- Somewhat Serious: 20%
- Not Serious: 10%
Overfishing/Overhunting

Total (n=634)

- Not Serious: 13%
- Somewhat Serious: 19%
- Very Serious: 42%
- Serious: 22%

Men (n=277)

- Not Serious: 10%
- Somewhat Serious: 20%
- Very Serious: 50%
- Serious: 20%

Women (n=378)

- Not Serious: 15%
- Somewhat Serious: 18%
- Very Serious: 43%
- Serious: 24%
Loss of Wetlands

Total (n=656)
- Very Serious: 45%
- Somewhat Serious: 15%
- Serious: 25%
- Not Serious: 9%

Men (n=277)
- Very Serious: <2%
- Somewhat Serious: 20%
- Serious: 25%
- Not Serious: 5%

Women (n=379)
- Very Serious: 45%
- Somewhat Serious: 10%
- Serious: 30%
- Not Serious: 0%
Question 2 of the survey asked respondents to decide whether or not they felt ASCMP was doing an effective job of meeting its goal to "provide effective resource management by protecting, maintaining, restoring, and enhancing the resources of the coastal zone."

The responses to this question are listed below.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>357</td>
<td>122</td>
<td>173</td>
</tr>
<tr>
<td>Men</td>
<td>140</td>
<td>60</td>
<td>74</td>
</tr>
<tr>
<td>Women</td>
<td>217</td>
<td>62</td>
<td>99</td>
</tr>
</tbody>
</table>

Interestingly, those respondents who filled out the Samoan version of the survey (n=206) were, on a percentage basis, much more likely to say that ASCMP was doing an effective job of meeting its goal than those respondents who filled out the English version of the survey (n=50).

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Not Sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>357</td>
<td>122</td>
<td>173</td>
</tr>
<tr>
<td>Samoan Version</td>
<td>141</td>
<td>14</td>
<td>49</td>
</tr>
<tr>
<td>English Version</td>
<td>216</td>
<td>108</td>
<td>124</td>
</tr>
</tbody>
</table>
Question 2

Total (n=856)

- Not Sure: 27%
- Yes: 54%
- No: 19%

Men (n=277)

- Not Sure: 27%
- Yes: 51%
- No: 22%

Women (n=379)

- Not Sure: 26%
- Yes: 50%
- No: 24%
Question 3 of the survey asked respondents what they thought ASCMP could do to better protect American Samoa's natural resources. The responses to this question are listed below in the order of frequency in which they appeared on the completed surveys.

- Enforce existing laws with stiff fines and penalties
- Create more programs/workshops to educate the general public (especially the youth) about the environment
- Set up a mandatory recycling program in the Territory
- Involve public with conservation efforts
- Establish an "Adopt-a-Beach" or "Adopt-a-Road" program
- Introduce more environmental legislation into the Fono
- Hold monthly competitions for the cleanest village (and provide prizes/monetary incentives)
- Work more closely with village councils and church leaders
- Produce more TV shows/videos about the environment
- Be more consistent when issuing land use permits
- Hold weekly talk shows on the radio about the environmental issues facing American Samoa
- Coordinate conservation efforts more closely with ASEPA, DMWR, Fugatele Bay, Le Tausagi, etc
- Place more signs alongside the road (at least one per village)
- Implement a family planning program to reduce the deleterious effects of overpopulation
- Hold "Coastweeks" more than just onces a year
- Hire more people to pick-up trash & keep Samoa clean
- Place more trash cans alongside the road
- Acquire more grant money for environmental programs
- Place more environmental ads in the paper
- Require Star-Kist and Van Camp to comply with air quality standards
- Plant more trees
- Build more sea walls
Question 4 of the survey asked respondents what they thought they could do to help solve America Samoa's environmental problems. The responses to this question are listed below in the order of frequency in which they appeared on the completed surveys.

- Work together
- Pick-up trash
- Refrain from littering
- Discourage others from littering
- Report illegal dumping/turn in violators
- Educate self and others about environmental issues
- Set a good example
- Discuss environmental problems with village councils
- Take personal responsibility
- Support ASGOP with its education efforts
- Participate in more education programs
- Reduce, recycle, reuse
- Volunteer
- Simplify lifestyle
- Plant trees
- Carpool
- Use environmentally friendly products
- Start an ecology club
- Have more pride in American Samoa
- Stop smoking
- Write letters to the editor
- Write to Congressional legislators in Washington DC, encouraging them to cut federal funding to American Samoa until they comply with environmental laws
- Pray to God for help
Question 5 of the survey asked respondents to indicate their sex. Again, a total of 379 women (58%) and 277 men (42%) participated in the survey.

Question 6 of the survey asked respondents to indicate their present age. Interestingly, those respondents who chose to fill-out the Samoan version of the survey were, on average, much older than those respondents who chose to fill-out the English version of the survey. The responses to the question are listed below.

<table>
<thead>
<tr>
<th>Total (n=686)</th>
<th>Under 25</th>
<th>26-35</th>
<th>36-45</th>
<th>46-55</th>
<th>56-65</th>
<th>Over 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years</td>
<td>Years</td>
<td>Years</td>
<td>Years</td>
<td>Years</td>
<td>Years</td>
<td>Years</td>
</tr>
<tr>
<td>314 (48%)</td>
<td>146 (22%)</td>
<td>100 (15%)</td>
<td>55 (8%)</td>
<td>20 (3%)</td>
<td>14 (2%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Men (n=277)</th>
<th>Under 25</th>
<th>26-35</th>
<th>36-45</th>
<th>46-55</th>
<th>56-65</th>
<th>Over 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years</td>
<td>Years</td>
<td>Years</td>
<td>Years</td>
<td>Years</td>
<td>Years</td>
<td>Years</td>
</tr>
<tr>
<td>99 (36%)</td>
<td>75 (27%)</td>
<td>48 (17%)</td>
<td>30 (11%)</td>
<td>10 (4%)</td>
<td>7 (3%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Women (n=379)</th>
<th>Under 25</th>
<th>26-35</th>
<th>36-45</th>
<th>46-55</th>
<th>56-65</th>
<th>Over 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years</td>
<td>Years</td>
<td>Years</td>
<td>Years</td>
<td>Years</td>
<td>Years</td>
<td>Years</td>
</tr>
<tr>
<td>215 (57%)</td>
<td>71 (19%)</td>
<td>52 (14%)</td>
<td>25 (7%)</td>
<td>10 (3%)</td>
<td>7 (2%)</td>
<td></td>
</tr>
</tbody>
</table>
Question 7 of the survey asked respondents to indicate the village in which they lived. More than four-fifths (n=50) of the Territory's 65 villages were represented in the survey. These villages are listed below in alphabetical order.

<table>
<thead>
<tr>
<th>Village</th>
<th>Village</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afao</td>
<td>Leloaloa</td>
</tr>
<tr>
<td>Afono</td>
<td>Leone</td>
</tr>
<tr>
<td>Alega</td>
<td>Lepua</td>
</tr>
<tr>
<td>Alofau</td>
<td>Malatiini</td>
</tr>
<tr>
<td>Anauave</td>
<td>Malaealoa</td>
</tr>
<tr>
<td>Aoa</td>
<td>Mapusaga</td>
</tr>
<tr>
<td>Asili</td>
<td>Masausi</td>
</tr>
<tr>
<td>Atu'u</td>
<td>Nu'umu'i</td>
</tr>
<tr>
<td>Auma</td>
<td>Ofu, Manu'a</td>
</tr>
<tr>
<td>Aua</td>
<td>Onen'a</td>
</tr>
<tr>
<td>Aunu'u Island</td>
<td>Ottoville</td>
</tr>
<tr>
<td>Avaio</td>
<td>Pago Pago</td>
</tr>
<tr>
<td>Faga'alu</td>
<td>Pavaiai</td>
</tr>
<tr>
<td>Faga'inau</td>
<td>Poloa</td>
</tr>
<tr>
<td>Fagali'i</td>
<td>Puapua</td>
</tr>
<tr>
<td>Faganalo</td>
<td>Saliele</td>
</tr>
<tr>
<td>Fagamatoa</td>
<td>Sataia</td>
</tr>
<tr>
<td>Faga'a</td>
<td>Se'ota</td>
</tr>
<tr>
<td>Fagatogo</td>
<td>Tafuna (Petesa Tui)</td>
</tr>
<tr>
<td>Fa'afilo</td>
<td>Taputimu</td>
</tr>
<tr>
<td>Falesiau</td>
<td>Utulei</td>
</tr>
<tr>
<td>Fagapogo</td>
<td>Vailoa</td>
</tr>
<tr>
<td>Futiga</td>
<td>Vaitogi</td>
</tr>
<tr>
<td>Ilili</td>
<td>Vatia</td>
</tr>
</tbody>
</table>
RECOMMENDATIONS

Recommendation 1: Institute a Territory-wide Recycling Program

In 1990, American Samoa imported 20,318,490 aluminum cans, 2,688,000 glass bottles, and 112.5 tons of newspaper to the Territory (Department of Urban and Regional Planning, 1996). A mandatory, well-coordinated recycling program would ensure that most, if not all, of these materials were recycled, reducing the total solid waste stream by as much as 13 percent. Corrugated cardboard, plastic bottles, steel cans, and "white" goods (including refrigerators, washers, dryers, hot water heaters, air conditioners, and stoves) could also be recycled. According to an analysis by the Pacific Basin Development Council and Ross & Associates (1992), recycling is feasible in American Samoa, especially if it were to be combined with a program from Western Samoa.

Recommendation 2: Implement a Family Planning Program

Without a doubt, this recommendation will be both the most controversial and the least likely to be implemented. However, the fact is that American Samoa simply cannot sustain its current population growth rate of 3.8 percent annually. A family planning program that drastically reduces family size needs to be endorsed and implemented immediately. Ideally, each family would have no more than two children, resulting in a population growth rate of zero. In other words, each of the parents in the family would be replaced by a single child, guaranteeing a stable population within two generations. Even if this program were to be instituted today, Samoa's population would continue to skyrocket for the next 10-20 years. Indeed, with over 20,000 children (or 38 percent of the population) under the age of fifteen living in the Territory, even the most optimistic scenario predicts that Tutuila's population will hit at least 90,000 people in just a few years (Craig, 1995).
Recommendation 3: Increase the Number of Trash Cans in the Territory

Survey respondents lamented that there were not enough garbage receptacles on the island. This problem could easily be remedied by increasing the number of trash cans (or recycled oil drums) in public areas such as parks, beaches, bus stops, and playing fields.

Recommendation 4: Make More Frequent and Effective Use of the Media as a Tool to Disseminate Information about Environmental Issues

Survey respondents noted that ASCMP should make full use of the media to spread its message. Video documentaries, public service announcements (PSA's), weekly newspaper columns, and radio "talk shows" would help to educate the general public about ASCMP's efforts to provide effective resource management in the Territory.

Recommendation 5: Update and Implement the Three Year Environmental Education Plan

In 1994, Kathleen Roos, a Technical Assistant from the University of Oregon, developed a three year environmental education plan for Americas Samoa. The goal of the plan was to provide an overall direction for ASCMP's long-term educational activities. Three years after it was first developed, many of the plan's objectives and recommendations have yet to be implemented. It is recommended that the 1994 ASCMP environmental education working committee regroup, identify and prioritize the objectives that have yet to be met, establish a time table, and make a concerted effort to implement those objectives that are deemed to be the most feasible and appropriate under current budgetary constraints.

Recommendation 6: Hire Several Full-time Enforcement Officers to Uphold Environmental Laws in the Territory

A law is of little use if it can not be enforced. For this reason, ASCMP should hire and train several full-time officers to strictly enforce those laws that currently exist to protect Samoa's natural resources. More specifically, officers would look for and cite those people who:
• litter and/or dump garbage into streams
• fill-in wetlands
• mine sand from the beaches
• kill fruit bats and/or other protected species
• dynamite the reefs
• use scuba tanks to spear fish at night

All violators would be subject to steep fines. The revenues generated from these fines could be used to offset the cost of hiring new enforcement officers or to finance additional environmental education programs in the Territory.

**Recommendation 7: Continue Distributing Copies of the Environmental Assessment Survey**

Only a tiny fraction (about one percent) of Samoa's population participated in this environmental assessment survey. Now that it has been developed, however, the survey could easily be distributed to thousands of more people across the Territory. Churches, schools, ASG employees, canery workers, and youth groups should be targeted to maximize survey response. Ideally, the information contained within each survey will help ASCMP with its education efforts.

**Recommendation 8: Develop and Conduct Environmental Education Workshops for All ASG Employees**

The American Samoa Government (ASG) must lead by example. Indeed, it will be very difficult to convince the general public to conserve Samoa's natural resources if ASG employees are uninformed about environmental issues or if they engage in activities that damage the environment. Constituting one-third of the labor force, government employees should be required to attend an intensive environmental education workshop. Ideally, they will share what they learned at the workshop with other friends and family members. Increased awareness will also make ASG employees more sensitive to environmental issues in the workplace.
REFERENCES


Department of Urban and Regional Planning (University of Hawai‘i at Manoa). 1996. American Samoa Coastal Management Program: A Case Study on Alternative Management Strategies. Funded by the Pacific Sea Grant Program under Institutional Grant No. NA36RO0507.


American Samoa Coastal Management Program Mandates

1. To provide more effective and sensitive administration of laws, rules, and programs.
2. To provide more effective and better coordinated territorial aid to the villages.
3. To assure that lands adjacent to the sea are developed in a way that results in the least amount of damage to coastal resources and that reduces the risk of damage caused by coastal hazards.
4. To reduce potential hazards to life and property that result from floods, tsunamis, landslides, and shoreline erosion.
5. To promote fisheries development in a manner consistent with sound fisheries management.
6. To reduce soil erosion.
7. To assure the proper siting of major facilities.
8. To promote agricultural development in a manner consistent with sound conservation practices.
9. To protect and restore coral reefs.
10. To improve and increase recreational opportunities and shorefront access for both residents and visitors.
11. To maintain, and, where necessary, restore high water quality.
12. To protect marine resources for present and future generations.
13. To provide and maintain safe drinking water.
14. To protect the value of unique areas from insensitive development.
15. To protect archaeological, cultural, and historic resources of American Samoa.
16. To maintain high air quality.
ASCM ENVIRONMENTAL ASSESSMENT SURVEY

Thank you! The purpose of this survey is to help the American Samoa Coastal Management Program (ASCM) in its mission to conserve coastal and marine natural resources. The information you provide is important because it will be used in a planning and implementation of future public awareness campaigns. We want to assure you that your answers will be treated with complete confidentiality. Your name will never be placed on the questionnaire or associated with any of your answers. When you are finished, please give the completed questionnaire to the person from whom you received it. 

1. Please indicate (by circling the appropriate letter) how serious you believe each of the following environmental problems in American Samoa to be:

<table>
<thead>
<tr>
<th>Problem</th>
<th>Very Serious</th>
<th>Serious</th>
<th>Somewhat Serious</th>
<th>Not Serious</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garbage/Rubbish</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>Toxic Waste</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>Air Pollution</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>Water Pollution</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>Overfishing/Overhunting</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>Loss of Wetlands</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
</tr>
</tbody>
</table>

2. The goal of ASCMP is "to provide effective resource management by protecting, maintaining, restoring, and enhancing the resources of the coastal zone." In your opinion, do you feel that ASCMP is doing an effective job in meeting this goal?
   A. YES
   B. NO
   C. NOT SURE

3. If not, what do you think that ASCMP can do to better protect American Samoa's natural resources?

4. What do you think you can do to help solve American Samoa's environmental problems?

5. What is your sex? (Circle the letter of your answer)
   A. MALE
   B. FEMALE

6. What is your present age? (Circle the letter of your answer)
   A. UNDER 25 YEARS
   B. 26-35 YEARS
   C. 36-45 YEARS
   D. 46-55 YEARS
   E. OVER 55 YEARS

7. In what village do you live? (Write in the name of your answer)

If you have any additional comments about the topics covered in this survey, please make them here. If you need more space for your comments, please use an additional sheet and return it with your questionnaire. Do not include your name or any other identifying marks. If you have any questions, please feel free to call us at 635-5155.
<table>
<thead>
<tr>
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<th>Ty Be Motuuk</th>
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</thead>
<tbody>
<tr>
<td>Gitaris Lapius</td>
<td>A</td>
<td>b</td>
<td>C</td>
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<tr>
<td>Pritycas</td>
<td>A</td>
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<td>C</td>
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<tr>
<td>De Pritycas</td>
<td>A</td>
<td>b</td>
<td>C</td>
</tr>
<tr>
<td>Val Pritycas</td>
<td>A</td>
<td>b</td>
<td>C</td>
</tr>
<tr>
<td>Vanititas -</td>
<td>A</td>
<td>b</td>
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<tr>
<td>Punxaxa</td>
<td>A</td>
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</tr>
<tr>
<td>Vanititas -</td>
<td>A</td>
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<tr>
<td>Uvaxxen</td>
<td>A</td>
<td>b</td>
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<tr>
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<td>A</td>
<td>b</td>
<td>C</td>
</tr>
<tr>
<td>Punxaxa x2 Punxaxa</td>
<td>A</td>
<td>b</td>
<td>C</td>
</tr>
</tbody>
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3. O stujo su la Pundaitsa u la Vinačia Gistlaxi vo Lendina u Avestů Suvvono la "sprinat su jep vo xina Pinda Stiologa!" vo xina Stiologa su la xina Fissmi Stiologa. "Sprinat su la xina Stiologa su la xina Fissmi Stiologa!" len xina mau, la tusi tu jep vo la Pinda Stiologa. ASCIBA su jep abe u la Fissmi Stiologa u la xina Fissmi Stiologa su la xina Fissmi Stiologa.

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Guidelines for Maximizing Survey Response

According to Dillman (1978), there are three things that should be done to encourage and maximize survey response:

1. **Reward the respondent by:**
   - showing positive regard
   - giving verbal appreciation
   - using a consulting approach
   - supporting his or her values
   - offering tangible rewards
   - making the questionnaire interesting

2. **Reduce costs to the respondent by:**
   - making the task appear brief
   - reducing the physical and mental effort that is required
   - eliminating chances for embarrassment
   - eliminating any implication of subordination
   - eliminating any direct monetary cost

3. **Establish trust by:**
   - providing a token of appreciation in advance
   - identifying with a known organization that has legitimacy
   - building on other exchange relationships

The following guidelines will also increase survey response:

- Use simple words.
- Do not be vague.
- Keep it short.
- Be specific.
- Do not talk down to respondents.
- Avoid bias.
- Avoid objectionable questions.
- Do not be too specific.
- Avoid cryptic questions.
- Avoid hypothetical questions.
- Avoid abbreviations or unconventional phrases.
- Avoid demanding questions.
- Avoid questions that contain a double negative.
- Be sure answer choices are mutually exclusive.
- Do not assume too much knowledge.
- Do not assume too much about respondent behavior.
- Be sure the question is technically accurate.
- Provide an appropriate time referent.
- Be sure the responses can be compared with existing information.
- Use lower case letters for questions, upper case for answers.
- Establish a vertical flow.
- Provide directions for how to answer.
- Ask one question at a time.
- Use multiple columns to conserve space
- Make questions fit each page.
- Use transitions for continuity.
• litter and/or dump garbage into streams
• fill-in wetlands
• mine sand from the beaches
• kill fruit bats and/or other protected species
• dynamite the reefs
• use scuba tanks to spear fish at night

All violators would be subject to steep fines. The revenues generated from these fines could be used to offset the cost of hiring new enforcement officers or to finance additional environmental education programs in the Territory.

**Recommendation 7: Continue Distributing Copies of the Environmental Assessment Survey**

Only a tiny fraction (about one percent) of Samoa's population participated in this environmental assessment survey. Now that it has been developed, however, the survey could easily be distributed to thousands of more people across the Territory. Churches, schools, ASG employees, cannery workers, and youth groups should be targeted to maximize survey response. Ideally, the information contained within each survey will help ASCMP with its education efforts.

**Recommendation 8: Develop and Conduct Environmental Education Workshops for All ASG Employees**

The American Samoa Government (ASG) must lead by example. Indeed, it will be very difficult to convince the general public to conserve Samoa's natural resources if ASG employees are uninformed about environmental issues or if they engage in activities that damage the environment. Constituting one-third of the labor force, government employees should be required to attend an intensive environmental education workshop. Ideally, they will share what they learned at the workshop with other friends and family members. Increased awareness will also make ASG employees more sensitive to environmental issues in the workplace.
Survey Distribution Guidelines

July 31, 1997

Dear

Talofa! Thank you for agreeing to help me with my environmental assessment survey. Needless to say, this project would not be possible without your assistance. The following guidelines are designed to make your job as painless as possible:

- Each person will be given sixty (60) blank surveys to distribute.
- Each person will then be responsible for distributing and collecting at least fifty (50) completed surveys.
- Surveys may be filled-out in either English or Samoan.
- To avoid bias, please distribute the survey to people that are not affiliated with ASCMP or the Department of Commerce.
- To get a representative sample of the island, please distribute the surveys to a cross-section of people (i.e. young and old, male and female, employed and unemployed, etc.).
- Please explain (briefly) the purpose of the survey to each respondent and stress the importance of filling it out as completely and accurately as possible.
- Surveys do not need to be completed on the spot (i.e. as soon as you hand them out); however, please keep track of the people to whom you give the survey so you can collect them at a later [specified] date.
- Please thank each respondent for taking the time to complete the survey.
- Please place the completed surveys in the enclosed envelope as soon as you receive them.
- All surveys need to be completed and handed-in to Ethan by August 15, 1997.

Questions??? Please call Ethan Taylor at 633-5555. Fa’afetai!
Enviro-Discoveries Summer Camps to begin June 25th

(Press Release) — Enviro-Discoveries Summer Camps will open the first of four sessions on June 25-27 at Avoa’s Two Dollar Beach.

The program is sponsored by the environmental group, Le Tausagi.

For the second year in a row, the Enviro-Discoveries overnight summer camps targeted for children ages 9-12 will run for four weeks, three in Tutuila and one in Manu’a. Each session will last three days and two nights.

“Last year was a pilot year for the overnight camps, and it turned out to be successful. The program planners have extended the camp sessions to three days and two nights,” said Le Tausagi.

The extension will enable all the agencies involved to give the students a complete picture of the local environment, both the good and the bad.

With the assistance of Amersen Corp volunteers, Le Tausagi hopes to give the campers a fun-filled, educational and once-in-a-lifetime experience.

“It is our goal to inspire and assist in the development of young stewards of our island home,” said Le Tausagi.

The camp focuses on hands-on activities, which is the reason for the outdoors. Students will be out in the environment doing things such as characterizing and recording organisms found on the beach and on the reef. Identifying fish by name both Samoan and English, catching it and dissecting it, investigating the sand for organic components, collecting shells and classifying them, naming trees and their characteristics, planting, using traditional methods to fish on the reef plus many more activities.

If that sounds like fun, wait till you see the games and entertainment provided by the camp staff which includes teachers, environmentalists and Amersen Corp volunteers.

The camp is coordinated by Le Tausagi with representatives from the Economic Development Planning Office, AS Environmental Protection Agency, ASCC/Land Grant Program and DMWR.

It is supported by the Emergency Medical Services of LBJ Hospital, the Museum’s Education Program, Boy Scouts-Vaite, Twotai of Samoa, Historic Preservation Office, National Parks Service, and storytellers from around the island.

For more info about the Enviro-Discoveries Summer Camps, please call 633-7354 or 633-5155.
Dear Le Tausagi,

Talofo! I would like to take this opportunity to thank you for allowing me to be a part of the 1997 Enviro-Discoveries Summer Camps. In addition to making a lot of new friends, I learned a great deal about the fa'a Samoa, or the Samoan way. Indeed, the daily (and nightly!) interactions with each of you served to enrich my understanding and appreciation of the Samoan culture.

My overall impression of the camps was very favorable. Admittedly, despite having worked as an environmental educator for three years, I was not fully prepared for the incredible amount of effort that was required to make each of the four camps a success. I would like to give special thanks to Punu for her hard work and dedication to the camps. She was responsible for much of the behind-the-scenes coordination and preparation that often goes unrecognized but is essential nonetheless.

The following observations and recommendations are offered to improve future camps:

Smoking: I was concerned with the inordinate amount of smoking that went on during the camps (not to mention the discarded cigarette butts lying around everywhere). Indeed, the only two Americoops volunteers that did not smoke happened to be six and eight months pregnant, respectively. I realize that it is not my place to dictate how one wishes to lead one's life. However, because children are often very impressionable, it is important that we, as responsible adults, make every effort possible to set a good example and serve as positive role models at all times. After all, here in American Samoa, smoking is seen by many to be a glamorous and chic thing to do. If a child sees one of the camp counselors smoking, s/he may be tempted to pick-up the habit. Furthermore, on numerous occasions, I [reluctantly] asked several of the counselors to please refrain from smoking in the classroom where many of us [non-smokers] had to sleep. However, despite my pleas, it was commonplace for people to walk in and out of the room with a lit cigarette in their hand. In the future, I suggest that smoking be allowed only after the children have gone to bed or in areas that are completely out-of-sight of the camp grounds.
Garbage: I was also discouraged by the vast amount of waste that was generated at the camps. Indeed, we drank from Styrofoam cups, ate from Styrofoam plates, and used plastic (i.e. disposable) utensils. Milk was served to the children in disposable cartons. Many of the snacks were individually wrapped. Moreover, little effort was made to encourage the children to reuse their plates and cups after each meal. From what I understand, after the first camp in Avaio, each of the children was told to bring their own set of [plastic] dishes; however, very few (if any) actually did so. In the future, I suggest that we refrain from bringing disposable plates and silverware to the camps. Those children who do not bring their own dishes to the camp will be required to wait until the other kids have finished with their meals before they can eat. I also strongly recommend taking a field trip to the government landfill so the children can see firsthand where all of their Styrofoam plates and cups actually end up.

Activities: I was very impressed with the number and variety of activities, games, presentations, field trip, and guest speakers at the four environmental camps. I did notice, however, that many of the sessions (especially in Avaio) were held back-to-back (i.e. one right after the other). The heat, coupled with short attention span, made it difficult for the children to remain attentive for extended (5-45 minutes) periods of time. In the future, I suggest that we give the children a short break (~15 minutes) between each session so they can stretch, get a drink of water, or use the restroom if necessary.
Colombia's rebel groups share leftist ideology, simmering rivalry

BOGOTÁ, Colombia (AP) — Colombia's government and the Revolutionary Armed Forces of Colombia, the largest rebel group in the country, reached an agreement Wednesday on the proration of the peace deal that the two sides signed in June. The agreement is a key step in the process of ending decades of civil war.

The deal was reached after months of negotiation and mediation by the United Nations. The two sides have been fighting for decades, with the government seeking to end the conflict and the FARC demanding greater autonomy and recognition.

The agreement includes provisions for the disarmament of the FARC, the release of political prisoners, and the participation of the FARC in the political process.

The agreement is seen as a major milestone in the peace process and is expected to bring a significant reduction in violence in the country.

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ATOMIC CONCRETE MUDDLE WALLS WEATHER PROOF FOR A LIFETIME

NAT'L PARK SPONSORS a tour for students

(Flora Retreat) — Twelve high school students will be taking a guided tour of the National Park of the Andes this week. The trip is generously supported by the National Park of the Andes and the Flora Retreat.

The students will learn about the flora and fauna of the park, as well as the importance of conservation and sustainability.

On Friday, the students and their teachers will participate in an eco-friendly team building activity.

Says Park Superintendent Dan Moriarty, "Our goal is to engage our students in the importance of conservation and to inspire them to become future stewards of the environment."
# Threatened Wildlife of American Samoa

<table>
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<tr>
<th>English Name</th>
<th>Samoan Name</th>
<th>Number</th>
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<tbody>
<tr>
<td>Many-colored Fruit-Dove</td>
<td>Manuma</td>
<td>50-100</td>
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<td>Gray Duck</td>
<td>Toloa</td>
<td>10-50</td>
</tr>
<tr>
<td>Sheath-tailed Bat</td>
<td>Pe’ape’avaï</td>
<td>&lt; 10?</td>
</tr>
<tr>
<td>Samoan Fruit Bat</td>
<td>Pe’a Vao</td>
<td>400-800</td>
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</table>

--- MANU’A ONLY ---

<table>
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<tr>
<th>English Name</th>
<th>Samoan Name</th>
<th>Number</th>
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</thead>
<tbody>
<tr>
<td>Friendly Ground-Dove</td>
<td>Tu’aimea</td>
<td>&lt; 10?</td>
</tr>
<tr>
<td>Spotless Crake</td>
<td>- none -</td>
<td>Unknown; none seen since ’87</td>
</tr>
<tr>
<td>Fiji Shrikebill</td>
<td>Sega o le Vao</td>
<td>Unknown; sharp decline?</td>
</tr>
</tbody>
</table>
Letter to the Editor

"DOGS AREN'T THE ONLY PROBLEM..."

Dear Editor:

Last week, my (pupil) roommate had the traumatic experience of being attacked and bitten by three dogs while walking home from work in Leone. Thankfully, she managed to escape with "only" a few small bruises on the back of her leg and a ripped pair of pants. However, my next door neighbor (also a pupi1) was not so lucky. Despite frantic screams of "Ali!" he was chased and mauled by the very same dogs later that afternoon. His injuries required medical treatment at LBJ's emergency room.

Incidentally, on both occasions, the owners of the dogs sat casually under their Fele and did nothing to help my friends fend-off their canine attackers. Obviously, it is completely unacceptable for dogs to be biting innocent people walking down the street. However, they are not the only ones to blame. Indeed, it is no wonder that dogs are wayward and mischievous of humans.

In the five short weeks that I have been in Samoa, I have seen countless dogs get hit, licked, and (purposely) run over by drivers exceeding the posted speed limit.

On one occasion, I watched in disbelief as a teenage boy stuck-up on a mangy dog eating rubber in a parking lot and hurled a rock at its back. The startled dog, emaciated and covered with open sores, yelped in pain and hobnobbed off. Spotting a big grin, the boy, obviously proud of his recent accomplishment, looked over and gave me the thumbs-up sign. Without saying a word, I shook my head in disappointment and continued down the sidewalk. Is this the "fa'a Samoa" on which Samoans claim to pride themselves? I hope not.

It breaks my heart to see starving, flea-infested dogs scavenging for food along side-the road. Al- mittedly, stray dogs can be a nuisance when they (insensitively) knock over trash cans in search of leftover scraps. However, what choice do they have in their daily struggle for survival? After all, they did not ask to be born into this world.

Without question, dogs are a big responsibility. Like children, they need to be fed, nurtured, and cared for when they are sick or injured. Consequently, if you are unable or unwilling to take on the responsibilities of owning a dog, then perhaps you should consider twice before bringing one into the first place.

I find it very ironic that the people of Samoa constantly complain about the dog problem and yet continue to allow their own dogs to roam freely and impregnate the stray dogs that plague the island. I am not suggesting that we tie-up all of Samo's dogs; instead, I ask that we work together to solve a common problem that will alleviate the unnecessary suffering of hundreds of dogs (and people!).

By agreeing to have your dog fixed, you can do your part to control the dog population. It only cost $15 to neuter a male dog and $20 to spay a female dog. You can make an appointment with a veterinarian in Tafoa by calling 693-9459 or 659-2896.

Rather than neglecting and abusing Samoa's dogs, we should treat them with respect and compassion. When given a chance, they can be a wonderful source of joy and companionship.

ETHAN TAYLOR, University of Oregon

Letter to the Editor

"FIGHTING DOGS KEEP ME FROM SLEEPING..."

Dear Editor:

I arrived on this island seven weeks ago, the only night I have had uninterrupted sleep is when there has been heavy rain. Those are the only nights that the outside of any dogs refrain from keeping us awake with their incessant fighting and barking.

We live in the government housing ear the LBJ Hospital and it seems that some of our neighbors either keep four to eight dogs or at least allow them on their property.

These dogs roam outside our fence at night keeping us awake. Every time we try to walk to the main road to take a bus, or to the parks in Utulei and Faga'alua for a swim, we get haraessed and attacked by aggressive dogs. The mere thought of trying this endeavor after dark frightens me. Most dogs seem to be mangy and untamed, some of them are pitifully covered with sores and boils.

Friends of mine, who have the dooful privil- ege of living at the government housing in Talatu, tell me that they haven't had a good night's sleep since they arrived many months ago. They also tell me that they don't dare to walk outside af- ter nighttime and that activities like juggling is out of the question due to attacking dogs.

Cases of doggie are said to be common and one forest used to carry a gourd to defend himself. The need of what would happen if rabbis was in- troduced on the island is mind staggering.

I have been informed that there exists a dog eradication program in the island and that dogs are supposedly TMR ticketed at a cost of $1. I have to fer, seen only two collared dogs, both inside private homes.

Considering the coming South Pacific Mini- Games, that hopefully will draw a lot of visitors, it must be embarrassing to have them compare America Samoa with poor and unfortunate third world counties where stray dogs roam everywhere. I have been embarrassed by just that kind of comments from visiting colleagues.

I suggest that the dog eradication program, if it exists, be put into full effect immediately. If the responsible government body cannot, or will not, cope with the problem, I suggest it be turned over to ASPA, who seems to be a public organization that can handle its allotted tasks in a profession- al manner.

As the situation is right now, I cannot recom- mend anyone to come to this island to work or for an extended stay although signs everywhere call it "Paradise Island".

Nils Eidele Radiologist at LBJ

\[\text{Page 2: Samoa News, Thursday, July 22, 1993}\]
Local divers complete Reef Check at Amalau Bay

(Press Release) — Divers from the government and the private sector have recently completed an Amalau Bay project to improve and monitor the health of the bay. The project involved a coordinated effort to monitor the health of the bay, focusing on the effects of environmental factors and other potential threats.

The project was initiated through a collaboration between the government and local businesses. The goal was to assess the health of Amalau Bay and identify areas for improvement.

The project involved a thorough analysis of the bay's ecology, including water quality, marine life, and human impact.

Results showed that the bay's health was generally good, with only a few areas exhibiting signs of stress. However, the project highlighted the need for continued monitoring and management to ensure the bay's health.

The project's success demonstrated the importance of collaboration between the government and private sector to protect and enhance our natural resources.

OFFICE OF THE GOVERNOR

PROCLAMATION

SENIOR CITIZENS WEEK

July 6-12, 1997

WHEREAS, the people of American Samoa have a great deal for which to be thankful because our people are living longer and healthier lives. Now, therefore, this is the 6th day of July, 1997, Governor of American Samoa.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Great Seal of the American Samoa Government to be affixed this 6th day of July, 1997.

Tumua T. H. Vea
Governor of American Samoa