Chapter 5. Social and Economic Environment

5.1 Cultural Resources

Archaeological and other cultural resources are important components of our nation's heritage. The Service is committed to protecting valuable evidence of plant, animal, and human interactions with each other and the landscape over time. These may include previously recorded or yet undocumented historic, cultural, archaeological, and paleontological resources as well as traditional cultural properties and the historic built environment. Protection of cultural resources is legally mandated under numerous Federal laws and regulations. Foremost among these are the NHPA, as amended, the Antiquities Act, Historic Sites Act, Archaeological Resources Protection Act, as amended, and Native American Graves Protection and Repatriation Act. Additionally, the Refuge seeks to maintain a working relationship and consult on a regular basis with villages that are or were traditionally tied to Rose Atoll.

5.1.1 Historical Background

The seafaring Polynesians settled the Samoan Archipelago about 3,000 years ago. They are thought to have been from Southeast Asia, making their way through Melanesia and Fiji to Samoa and Tonga. They brought with them plants, pigs, dogs, chickens, and likely the Polynesian rat. Most settlement occurred in coastal areas and other islands, resulting in archaeological sites lost to ocean waters. Early archaeological sites housed pottery, basalt flakes and tools, volcanic glass, shell fishhooks and ornaments, and faunal remains. Stone quarries (used for tools such as adzes) have also been discovered on Tutuila and basalt from Tutuila has been found on the Manu'a Islands. Grinding stones have also been found in the Manu'a Islands. Despite surveys, no quarries have been identified in Manu'a (ASHPO 2012).

In the later period of Samoan pre-contact, warfare for titled positions was frequent in Samoa and it likely influenced Tutuila and Manu'a. Oral traditions in the Manu'a Islands refer to leaders of islands to the west (Fiji, Samoa, etc.) visiting on sometimes hostile missions. Defensive fortification sites, often located high on ridges and mountains, define this period, with one such structure in Tutuila (a large defensive wall) on the National Register of Historic Places and another structure (fortification) on Ofu Island planned for nomination to the National Register. A typical layout of a Samoan village was a central open space (malae), surrounded by meeting houses, chiefs' houses, other residences, and cooking houses (ASHPO 2012).

European contact occurred in 1722, with Dutch navigator Jacob Roggeveen followed by French explorers Louis-Antoine de Bougainville in 1768 and Jean-Francois de La Perouse in 1787. Englishman John Williams of the London Missionary Society arrived in 1830, bringing with him Christianity which changed Samoan culture and ways. It was also when Westerners started to settle these islands. European traders and military personnel also changed Samoan society. Local warfare ceased, quarries were abandoned with the introduction of metal tools, and local customs and practices changed (ASHPO 2012).

The Tripartite Convention of 1899 formally partitioned the Samoan Archipelago into a German colony and a U.S. territory. This convention resulted from several years of civil war among Samoan factions and the rivalry between the U.S., Germany, and Britain. The U.S. acquired the eastern

islands, while Germany took control of what now comprises Samoa, which New Zealand forces took from the Germans in 1914 until 1962 (ASHPO 2012).

American Samoa, under U.S. Naval control from 1900 to 1951, was a coaling station for its fleets. World War II (WWII) began the transition of the economy from subsistence toward commercial. The U.S. Naval Station Tutuila (now a Historic District listed on the National Register) was the headquarters of the Samoan Defense Group, which included several adjacent island groups. Historic properties from WWII are found throughout the islands. Post WWII, American Samoa's military importance declined and the 1940s and 1950s saw severe economic distress with the Navy leaving. This period started the exodus of the Samoan workforce to Hawai'i and the mainland U.S. In 1951, the administrative responsibility for coordinating Federal policy to the Territory was transferred to the DOI, where it remains today. Between 1951 and 1977, Territorial Governors were appointed by the Secretary of the Interior; but since 1977, they have been elected by universal suffrage (ASHPO 2012). American Samoa has its own constitution, its own legislature, its own court system, and a non-voting delegate in the U.S. House of Representatives.

Starting in 1954, the tuna industry started to invest in American Samoa with the opening of canneries by the Van Camp Seafood Company of California and Starkist Incorporated. It became a major industry for the Territory, attracting workers from Samoa as well as China. This last decade has seen a decline, however, with the canneries downsizing or shutting down (ASHPO 2012).

Despite its post-contact history and Western interactions, the Samoan culture and societal structure remains strong (often reflected in the phrase fa'a Samoa or the Samoan way of life). Communal or *aiga* (family) land and *matai* (chief) systems remain intact. The matai are divided into *ali'i* (high chiefs) and *tulafale* (talking chiefs or orators who usually serve as executive agents for *ali'i*). The basic unit of Samoan society, the *aiga* or extended family group, is a group of people related by blood, marriage, or adoption. This family group can number from a few to several hundred who also acknowledge a common allegiance to a particular *matai*. The *matai* possesses some authority over the members of his family and regulates some of their activities as well as family resources (especially land–up to 90% of land in American Samoa is communally owned). However, traditionally, the *matai* consults the *aiga* before exercising his authority. The *matai* title holder will always be from the same family line. A non-family/descent line cannot hold a ranking *matai* title within a family. The resilience of the Samoan culture also has to do with its preservation being codified in its Bill of Rights (Article 3) and American Samoa Code Annotated (Title 1, section 1.0202).

5.1.2 Rose Atoll and Manu'a Islands

The Manu'a Islands are comprised of Ofu, Olosega, and Ta'ū Islands, and Rose Atoll. Manu'a contains the origins of Samoans and the genealogy of Polynesians east of Samoa is said to have originated here. The Solo'o Va recounts the creation of Samoa and Manu'a is described as the first of lands, and the high peak of the island of Ta'ū, home of *Tagaloa* (the earthly offspring of the creator god). As such, the islands of Manu'a are considered sacred and the title of *Tui Manu'a*, seen as being the highest in rank of all the chiefly titles of Samoa. When the last Tui Manu'a died in 1909, the Tui Manu'a title was distributed amongst the different villages in Manu'a (e.g., Tui Olosega, Ofu).

The Manu'a Islands were always independent of the other Samoan Islands, though songs, stories, and genealogies show contact occurred among all the islands. It was known that De Bougainville had traded with Manuans at Ofu in 1768, but did not land (Taomia 1997). John Williams and other

Christian missionaries arrived in Manu'a in 1832. The cession of the Manu'a Islands to the U.S. occurred in 1904 and included Rose Atoll (though it is said that the *Tuimanu'a* at the time traveled to Rose Atoll after this partition and took with him a flag representing the five islands of Ofu, Fo'isia, Olosega, Ta'ū, and Rose Atoll which he staked at the atoll to reassert his authority [SSI 2012]). The Manu'a Islands form, administratively, the Manu'a District, one of three districts in American Samoa. Ofu, Olosega, and Ta'ū are all high islands and all lands are communally owned. Ta'ū is physically the largest island. Villages in Manu'a usually number about 300 people. Local farming and fishing is prevalent. The Manu'a Islands were also where famed anthropologist Margaret Mead did her research (in the village of Ta'ū) and based her 1928 book *Coming of Age in Samoa*.

Although archaeological studies have been conducted on the Manu'a Islands, prior to 2012, none of the studies included Rose Atoll. The people of Ta'ū tend to call the atoll Muliāva, which means "the end of the reef" or Muli A'au which means "the last reef" (Gray 1960, Krämer 1995), while the people of Ofu tend to refer to the atoll as Nu'u of Manu, meaning "village of seabirds" (Krämer 1995, Maragos, pers. comm. 2010). Other less common names include Motu o Manu (island of seabirds) and Nu'umanu (place of the sea monsters). Written documentation of historical uses of Rose Atoll by the Samoans is extremely limited, as the primary method of passing down information through the generations was through oral tradition. However, in general, Samoans believe that their relationship to lands and contiguous reefs and seas is a covenant with the Almighty. Samoans were gifted these resources to use for sustenance and their perpetuation, but also given the responsibility to properly conserve and husband these resources (SSI 2012). It is said that the *Tui Manu'a* routinely visited the atoll. The kings of Samoa would assemble near the atoll and often participated in games and leisurely activities, which included the snaring of terns. Due to the use of the atoll by the high chiefs, it was considered sacred and visitors were forbidden from setting foot on the atoll. The atoll was also believed to be guarded by *ilamutu* (supernatural protectors) (SSI 2012).

According to local knowledge, the Manuans used celestial navigation to reach Rose Atoll. Rose Atoll is featured in a Manuan chant entitled "O le Solo a Fitiaumua" (Krämer 1995). The song tells the story of a husband and wife chased away from their home in Fitiuta after the husband stole food from a chief's taro plantation for his starving pregnant wife. The couple was banished, set adrift on the ocean and landed at Rose Atoll, where they had a son, Fitiaumua. When the boy became an adult, he learned of his parents' story and sought revenge. He overran and conquered Samoa, Fiji, and Tonga in a war, and became a successful king residing in Manu'a.

Samoan islanders visited Rose Atoll to fish and collect birds (including feathers for cultural adornments and handicrafts, the most prized of which came from the red and white-tailed tropicbirds), turtles, faisua, and other resources (Amerson et al. 1982). Terns were especially used to direct fishermen to schools of fish. It was customary for the strongest males of Manu'a to go out with the *tautai* (master fishermen) to fish for sharks and skipjack tuna. However, the 2012 Samoan Studies Institute report notes that of the fishermen who had been interviewed (all in their 60s), none had been to Rose Atoll until the 2011 trip and that it had been their father's generation who had first-hand experience fishing at the atoll. The report also noted that a village men's group described that fishing trips to Rose Atoll were only conducted when season fish were not abundant in immediate waters and reefs (SSI 2012).

Many of the seabirds found at Rose Atoll are also reflected in Samoan sayings, such as: *Seu le manu ae taga'i i le galu* (refers to the boobies)–applied in advising one to take caution; *Taape le fuāmanusina* (refers to the tropicbirds)–used at the closing of meetings to mean that everyone will depart together; *Ua pafuga le ā e pei o le faiva o le seugā gogo* (refers to terns and the sound of their

calls)–said in happy salutations and occasions. There are also similar sayings related to sharks (SSI 2012).

Samoans also brought volcanic rocks to use as cooking stones when they fished and hunted turtles (Keating 1992). However, because Rose Island has no fresh water, visitors likely stayed for short durations. The first recorded Western sighting of Rose occurred in July 1722 by Dutch explorer Jacob Roggeveen, who referred to the atoll as "foul island" after observing the island was surrounded by a reef of rocks and had a low elevation (Sharp 1970, Krämer 1995). However, the atoll was given its lasting Western name in 1819 by French navigator Louis de Freycinet who named it after his wife.

Louis de Freycinet was the Commander of the French vessel *L'Uranie* on a voyage of discovery that circumnavigated the globe. The 22-year-old Rose de Freycinet was smuggled on board dressed as a man and also has Cape Rose in Western Australia named after her (Bassett 1962, Western Australia Museum 2012, Sharp 1970).

Additional western observations came in 1824 by Russian explorer Otto von Kotzebue and Frenchman Dumont D'Urville in 1838. The first recorded landing at Rose was documented by Captain Charles Wilkes of the U.S. Navy. He led an expedition to the atoll in 1839 where botanists and an anthropologist collected specimens. Two plants, *Portulaca* and *Pisonia grandis*, were recorded.

Fallen monument and location of former Refuge sign. USFWS

The only documented case of people living on Rose Atoll came in the 1860s when a German company bought the right to establish a fishing station and coconut plantation from the Tui Manu'a (High Chief of the Manu'a Islands) and a Samoan family was stationed on Rose Island for a few years (Gray 1960, Sachet 1954). In 1990 the remains of the foundation of a *fale* (traditional Samoan house) that could have dated to the 1860s was located by David Herdrich from ASHPO (Herdrich, pers. comm. 2011).

In January 1920, Governor Terhune went to Rose Island and erected a concrete monument commemorating the visit with the words "Rose Island, American Samoa, Trespassing Prohibited, Warren J. Terhune Governor, January 10, 1920". The monument is 4 feet high, 4 feet wide, and 1 foot thick. It is still on the island but is no longer standing upright due to unstable ground. The area is presently a *Tournefortia* forest and the monument is no longer visible from the water or beach. There is a second, smaller concrete U.S. Navy survey marker. It had fallen over as well, but was righted in March 2008 during a NOAA CRED mission which included Governor Tulafono.

Fallen monument (archaeological team visit with USFWS and NPS staff) and Navy survey marker (right photo). USFWS

Rose Island is subject to wash overs by waves during hurricanes, making it a poor environment for maintaining archeological artifacts. There are no historic properties at the atoll.

There are four known records of shipwrecks in the area: schooner *Friendship* (1849), schooner *Wakulla* (1853), schooner *Good Templar* (1868), and the fishing vessel *Jin Shiang Fa* (1993). The *Jin Shiang Fa* ran into the southwest section of the atoll and broke apart. The largest sections of it were towed off the reef and dumped in the deep ocean, but pieces of it may still wash up on the reef in hurricanes to this day. There are no signs of the older wrecks.

A pre-contact canoe anchor was found at Rose Atoll and given to the National Park of American Samoa and displayed in their visitor center. The anchor was lost in the September 2009 tsunami that destroyed the visitor's center.

A canoe anchor that was found on Sand Island by David Herdrich, ASHPO, in 1990. NPS

In March 2011, 12 Manu'a community representatives, and 5 students and 5 teachers from Manu'a schools attended a trip to the Refuge. The purpose of the trip was documenting the oral history of Rose Atoll. It was sponsored by the IGC (consisting of the DMWR, the Service, ONMS, NMFS and ASDOC) and was funded by a grant from the NMFS to the DMWR. The SSI completed a report (entitled "Oral Traditions of Rose Atoll (Muliava)"), along with a bilingual brochure and DVD, to document the trip as well as the connections between the people of Manu'a and Rose Atoll (Muliava, Nu'u o Manu).

The information generated from this trip will be used to produce EE and cultural interpretation materials for use by communities and outreach to the larger public.

In February 2012, 3 archeologists (including lead archaeologist David Herdrich from ASHPO) conducted a 5-day survey of Rose Atoll on a Service-sponsored trip. This was the first in-depth archeology trip to Rose Atoll conducted. At the time of this writing their results are still being analyzed, which will be available to the public when completed.

5.2 Refuge Facilities

Refuge facilities are usually structures that support both visitor services and biological management at a refuge. However, Rose Atoll NWR is closed to general public use and has no permanent infrastructure such as roads, fences, trails, etc. At one time, the Refuge did have a sign at Rose Island identifying the atoll as a NWR and being closed to visitors; however, due to weather conditions and storm events, it has since fallen into disrepair and is no longer on the island.

Though the Refuge does not have facilities at the atoll, it does have office space co-located with the National Park of American Samoa in Tutuila and also contracts a boat for transportation to the atoll for management purposes.

5.3 Public Use Overview

The Refuge is closed to general public use to protect the sensitive habitats and wildlife at the atoll. Its remote location, logistical challenges, and safety issues also substantiate its closure to the general public.

5.4 Wildlife-Dependent Public Uses

The Improvement Act identified wildlife observation and photography, hunting and fishing, and EE and interpretation as wildlife-dependent, priority public uses for the Refuge System, when compatible. An SUP is required to enter the Refuge for any purpose.

5.4.1 Hunting

The Refuge is not open for hunting due to the sensitive wildlife found at the atoll.

5.4.2 Fishing

In the 1980s, the Refuge's Public Use Policy permitted fishing in the Refuge as long as the fish were released or consumed within the Refuge (USFWS 1987). However, this policy was discontinued in the early 1990s. The Refuge continues to be closed for fishing due to the small size of the lagoon and its limited fish and invertebrate community. The ecological limits of these populations make them particularly vulnerable to fishing pressure. Closure to fishing also adheres to the Monument Proclamation (which directs us to prohibit commercial fishing in the Monument), meets the Refuge's purposes, and fulfills the Governor of American Samoa's support for a no-take area to protect the coral reef ecosystem. Fishing is offered in other parts of American Samoa.

5.4.3 Wildlife Observation and Photography

The Refuge is not open to wildlife observation or photography and no SUPs have been issued in the past for this activity. Wildlife observation and photography opportunities are offered on the high islands of American Samoa (e.g., National Park of American Samoa).

5.4.4 Environmental Education

During the 1980s and 1990s, field trips for students and teachers to the Refuge occurred. However, given the disturbance to wildlife, logistical difficulties, safety issues, and lack of available staff, such opportunities were discontinued and there is no EE currently offered at the Refuge. However, other types of EE about the Refuge are offered on Tutuila and the Manu'a Islands (see Chapter 2 regarding the future focus of EE on bringing the Refuge to the people, not bringing the people to the Refuge).

5.4.5 Interpretation/Outreach

The Service maintains a website (http://www.fws.gov/roseatoll/) and we have given regular talks about Rose Atoll to students at the American Samoa Community College. Prior to the 2009 tsunami, there was interpretive information about Rose Atoll and the Refuge at the National Park of American Samoa visitor center. The Service is presently working with NPS to have displays again in their new visitor center. There is also an exhibit on Rose Atoll at the Tauese P.F. Sunia Ocean Center.

5.4.6 Cultural Resources Interpretation

Currently no cultural resources interpretation is conducted. However, the March 2011 and February 2012 trips identified in the previous section will provide information that can be used for these purposes in the future.

5.5 Illegal Uses

Due to the remoteness of the Refuge, systematically documenting illegal use is challenging. Documented cases between 1973-2005 (Wegmann and Holzwarth 2006) recorded two illegal incidents. Additionally, according to the annual law enforcement Refuge System reports, one incident of trespass was recorded in 2010. However, given accounts provided to Refuge staff and encounters during Refuge visits, it is known that recreational boaters and fishermen enter the Refuge illegally. In June 2009, Service staff were called upon to help rescue a grounded boat in the lagoon. On a September 2010 trip to Rose Atoll conducted by the Service and the DMWR, two private vessels expecting to enter the Refuge were turned away. Vessels over 50 feet are excluded from fishing within 50 nautical miles of Rose Atoll. NOAA NMFS established the final rule for fishing within the Monument in June 2013 and the Service is working with partners to develop enforcement options.

Yacht being towed out of the Refuge. Wally Thompson

The Service law enforcement issues on lands and waters of the Refuge are under the jurisdiction of the Refuge Zone Officer based in Honolulu. The role of this officer is to conduct and document law enforcement incidents and coordinate and/or meet with Refuge staff as well as law enforcement partners. Primary laws and regulations enforced include, but are not limited to the:

- Administration Act;
- Lacey Act;
- Archaeological Resource Protection Act;
- ESA;
- MBTA;
- MSFCMA; and
- Marine Mammal Protection Act.

Zone officers are also empowered to enforce all criminal laws and often partner with other law enforcement agencies. The USCG enforces natural resource laws by providing patrol and surveillance of the Refuge, both on-site and through remote sensing. The Refuge Zone Officer coordinates with the USCG on issues of trespass and illegal activities.

5.6 Social/Economic Environment

5.6.1 Communities near Rose Atoll National Wildlife Refuge

The nearest community to the Refuge is the Manu'a Islands, approximately 80 miles away. The next group of islands closest to the Refuge is Tutuila and Aunu'u, approximately 180 miles away. Tutuila is where the main population, government, and industries in American Samoa are located.

5.6.2 Population, Housing, and Income

In 2010, the population of American Samoa was around 55,519. This represented a decrease of 3.1% from the 2000 Census population of 57,291. A majority of this population lives on Tutuila with only about 1,100 people living in the Manu'a Islands. In 2009, the median household income was $28,892 (U.S. Census Bureau 2010). The total population of American Samoa is comprised of approximately 93% native Pacific islanders, 4% Asian, 1% white, and 2% other ethnic origin. The median age is 23 years (OIA 2012). For people on Ta'ū Village (Si'ufaga) and Faleasao (Leusoali'i), there was a high percentage of high school graduates or higher (70.5% and 56.8% respectively). These two villages also were overwhelmingly Samoan in terms of population composition (91.3% and 99.4% respectively) (U.S. Census Bureau 2003).

Measuring economic welfare in American Samoa is challenging due to lack of data. It should also be noted that cost of living and income cannot be compared to the continental U.S. as American Samoa still maintains traditional lifestyles where subsistence living is a common way of life. Three common measures of economic welfare are the unemployment rate, per capita income, and gross domestic product per worker; however, there are almost no data on these measures. Based on a study that was conducted for the American Samoa Department of Commerce (McPhee et al. 2008), the unemployment rate in 2002 was in the vicinity of 7%, roughly one-half the rate in 1977, real per capita income rose at a 2.1% annual rate between 1977 and 2002, and nominal-dollar gross domestic product (GDP) per worker increased from $6,054 in 1977 to $27,048 in 2002. The study found that employment had doubled between 1977 and 2002, the unemployment rate had fallen, and per capita income rose by about 2%.

5.6.3 Employment and Business

Major employers are the ASG and the fish processing industry, including fresh fish export and canning operations. The Chicken of the Sea tuna cannery closed in 2009, and in 2011, the StarKist cannery reduced its workforce due to changes in minimum wage standards (CIA Factbook). TriMarine, or Samoa Tuna Processors as known locally, took over Chicken of the Sea's vacated facilities and started fresh fish export operations shortly thereafter. The American Samoa economy is not well diversified, leaving the Territory very dependent on the fish processing industries and Federal grants and aid.

According to the U.S. Census Bureau's 2007 Economic Census for Island Areas, the Manu'a District had 12 establishments with payroll which qualified for this census. A majority of this (8) was identified as retail trade. However, construction and educational, health, and social services were the industries which employed the largest percentage of workers in both Si'ufaga and Leusoali'i. About 51.9% and 47.1% of Si'ufaga and Leusoali'i, respectively, were in the labor force and 14.3% of Si'ufaga people unemployed (there are no data for Leusoali'i) (U.S. Census Bureau 2003).

Table 5-1. Employment and Labor Income 2002

American Samoa Employment and Labor Income, 2002

	Employment	Percent of Total	Labor Income (mil. $)	Percent of Total	Average Labor Income ($)
Agriculture, fishing, and mining[1]	520	2.9	12.2	4.3	23,462
Construction	598	3.4	9.6	3.4	16,054
Fish processing	5,538	31.1	49.4	17.3	8,920
Other manufacturing	56	0.3	0.3	0.1	5,357
Wholesale trade	352	2.0	3.9	1.4	11,080
Retail trade	1,854	10.4	17.5	6.1	9,439
Transportation and warehousing	786	4.4	6.3	2.2	8,015
Information	294	1.7	4.4	1.5	14,966
Financial activities	327	1.8	6.4	2.2	19,572
Professional and business services	900	5.1	18.2	6.4	20,222
Educational and healthcare services	766	4.3	15.6	5.5	20,366
Accommodation	44	0.2	0.3	0.1	6,818
Food services and drinking places	571	3.2	4.2	1.5	7,356
Other services	351	2.0	3.9	1.4	11,111
Government authorities	496	2.8	9.3	3.3	18,750
American Samoa government	4,187	23.5	79.2	27.7	18,916
Federal government	158	0.9	6.9	2.4	43,671
Agriculture for self-consumption	---	---	38.0	38.0	---
Total	17,798	100.0	285.6	100.0	13,912[2]

[1]Employment classified by the North American Industrial Classification System.
[2]Excludes imputed value of proprietors' income from agriculture and fishing for self-consumption.

Source: McPhee et al. 2008

Table 5-2. Economic Projections 2000-2015

Economic Projections for the American Samoa Economy, 2000-2015

	2000	2005	2010	2015
BASELINE				
Employment	16,718	17,344	19,075	19,910
Fish processing	5,100	4,546	5,100	5,200
Other industries	6,618	6,734	7,366	7,730
Government	5,000	6,064	6,609	6,980
Personal income (mils. $)	340.7	488.0	648.9	800.2
Consumer prices index (1997.3=100)	104.2	127.2	148.9	170.1
Population (July 1)	57,700	65,500	72,000	75,200
HIGH				
Employment	16,718	17,344	20,100	22,003
Fish processing	5,100	4,546	5,600	6,200.
Other industries	6,618	6,734	7,682	8,381
Government	5,000	6,064	6,818	7,422
Personal income (mils. $)	340.7	488.0	678.5	871.7
Consumer prices index (1997.3=100)	104.2	127.2	148.9	170.1
Population (July 1)	57,700	65,500	74,400	80,000
LOW				
Employment	16,718	17,344	17,449	12,222
Fish processing	5,100	4,546	4,000	0
Other industries	6,618	6,734	6,974	5,877
Government	5,000	6,064	6,475	6,345
Personal income (mils. $)	340.7	488.0	594.0	538.5
Consumer prices index (1997.3=100)	104.2	127.2	148.9	170.1
Population (July 1)	57,700	65,500	67,100	55,600

Note: Projections in the table above may have been affected by the 2008 economic downturn.
Source: McPhee et al. 2008

5.6.4 Refuge Impact on Local Economies

The Refuge has no substantial impact on the local economy. There is no visitation by the general public allowed to the Refuge, so impacts to the surrounding community economies does not exist as they do for other refuges. However, permitted activities, such as research, can contribute to the local economy via purchase of supplies, contracts for transportation and personnel, housing, food, etc. There is only one Refuge employee (a Refuge/Monument Manager) based out of Tutuila, so staff contribution to the local economy is negligible (e.g., personal expenditures such as rent, groceries, and work related expenditures such as operational supplies). Related Refuge personnel based in Honolulu, Hawai‘i, sometimes assist with Refuge management and can contribute to the local economy similar to research activities. The Fiscal Year (FY) 12 budget for the Refuge was $291,550.

5.6.5 Additional Economic Contributions

It is important to note that the economic value of the Refuge encompasses more than just the impacts on the regional economy. The Refuge also provides substantial nonmarket values (values for items not exchanged in established markets) that should also be considered. Examples include maintaining endangered species, preserving habitats, educating future generations, and adding stability to the ecosystem (Carver and Caudill 2007). According to a recent report, the total value of ecosystem services provided by natural habitats in the Refuge System in the contiguous states totaled $32.3 billion per year, or $2,900 thousand per acre per year (Southwick Associates 2011).