

Botanical Survey of Midway Atoll
1999 Update

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INTRODUCTION

This botanical survey was conducted during our stay at Midway Atoll from March 27, 1999 through June 30, 1999. The purpose of the survey was to update the existing list of plants known from Midway Atoll. Our aim was to assist in finding additional introduced species, to identify potentially invasive species, to relocate, if possible, any rare native plant species not seen in recent surveys, and to provide information about distributions of plants which may have changed due to the removal of rats. Our intent is similar to that described by W. A. Bryan who surveyed Midway Atoll in 1905 and wrote, "It is hoped that the notes here given may in the future prove of value in noting the change in the plant and bird life which will doubtless be effected through the influence of the colony that has since been permanently established there." The style and information in this report reflect, and are meant to be used in conjunction with, an earlier survey done on Midway in 1995 by M. Bruegmann (1998). This update is meant to both assist in summarizing major threats and trends and to highlight management recommendations.

The Northwestern (or Leeward) Hawaiian Islands are comprised of small islands and associated reefs and banks that extends west-northwestward for nearly 1,200 miles (2,000 km) beyond Kauai and Ni'ihau (Macdonald et al. 1983). Geologically, the Northwestern Hawaiian Islands are older than that of the Main Islands with the oldest islands located at the western extent of the chain. The islands are relatively small in size totaling only about 10 square miles, or two thousand acres. Midway Atoll is located at the western end of the Leeward Chain approximately 1,580 miles (2,540 km) from Hawai'i Island (Juvik and Juvik 1998). The basaltic rocks beneath the atoll have been dated at 27 million years (Dalrymple et al. 1977). Midway is a nearly circular atoll 6 miles (10 km) in diameter enclosing a lagoon 4.8 miles (8 km) across. Within the lagoon are three small sand islands, Sand, Eastern, and Spit. Sand Island is 1.62 miles (2.7 km) long and 43 feet (13 m) high. Eastern Island is 1.14 miles (1.9 km) long and 13 feet (4 m) high (Macdonald et al. 1983). Spit Island is a small calcareous set of islands which change in number as well as shape from time to time. Spit Island has been the least disturbed by humans of the three islands, probably because of its small size and ephemeral nature.

HISTORY OF MIDWAY ATOLL

Midway Atoll, as its name suggests, is located in about the center of the North Pacific. This strategic location has resulted in human occupation since before the turn of the century. Looking at the history of human occupation on Midway Atoll helps shed light on the current composition and distribution of plants on Midway Atoll. Midway Atoll was first discovered on July 8, 1859, by Captain N. C. Brooks, of the Hawaiian bark *Gambia* (Bryan 1954). On August 28, 1867, Captain William Reynolds claimed the islands for the United States and called them, *Brooks Islands*. By 1870, dredging of the channel begun to make way for the Pacific Mail Steamship Company. This endeavor was eventually

abandoned due to ill weather and lack of funds to complete the dredging. During this time, many shipwrecked souls became inhabitants of the atoll.

The first permanent inhabitants of Midway Atoll occurred when the Commercial Pacific Cable Company set up a relay station on Sand Island in 1903. It was during this year, on July 4, that the first around the world message was sent. Midway Atoll, particularly Sand Island, began to change to make the island comfortable for human life. According to Bailey and Niedrach (1951), "approximately 150 tons of soil for gardens were transported each trip for more than a decade. Grass from the California mainland was planted in clumps to help in holding the sand in place, and hundreds of ironwood trees were planted to give protection from the glowing sun. In a short time the cable people had a little green oasis in a desert of sand" (Bryan 1954). A total of about 9,000 tons of soil was introduced during this time for use in the 3 acre vegetable garden (Hadden 1941). The islands were placed under the jurisdiction of the U. S. Navy on January 20, 1903 and marines were stationed there to protect the Cable Company employees from marauding sea bird poachers.

In 1935, the Pan American Airways began to use Midway Atoll as a base. At this time, more buildings, including a hotel, were erected. To minimize the dangers of transported insect pests on flights, the Hawaiian Sugar Planters' Association placed entomologist, Fred C. Hadden, on Midway from 1936-1941 to fumigate east bound planes. According to Hadden, "From 15 to 20 insects, consisting of 5 or 6 species, are frequently found during this inspection. In one case over 1,000 insects were found on the plane; very rare are no insects found." About 200 species in all were found during that time on flights arriving from Honolulu, Wake, Guam, Manila or Hong Kong (Hadden 1941). By 1939, military occupation began to increase. On December 7, 1941 the Japanese bombarded Midway Atoll and the great battle of Midway followed shortly after in June, 1942, putting an end to World War II. At this time, both Sand and Eastern Island were inhabited by over 2000 Navy personnel. The result is a near total conversion of its natural vegetation to managed, artificial forms (Mueller-Dombois & Fosberg 1998).

The history of human occupation of this atoll has greatly altered the vegetation of these remote sand islands. Approaching the atoll, it appears different than any other Northwestern Hawaiian Island. In 1902, Bryan describes Sand Island as "little more than a barren, blinding heap of sand". Today, there are less than 200 inhabitants on Sand Island and it is covered with ironwood forests, buildings, lawns, and runways. Eastern and Spit islands are uninhabited. Midway Atoll is currently managed by the U. S. Fish and Wildlife Service in a partnership with Midway Phoenix Corporation. We hope this report will assist in them in their efforts.

Very few botanical surveys have been conducted at Midway Atoll in the past. Previous botanical surveys have been done by William A. Bryan who visited Midway Atoll in 1902; Erling Christophersen and Edward L. Caum, with the Tanager Expedition, in 1923 and 1924; Johnson A. Neff and Philip A. DuMont in 1954; E. H. Bryan in 1954; Charles H. Lamoureux in 1961; C. R. Long in 1964; Steven I. Apfelbaum, James P. Ludwig and

Catherine E. Ludwig in 1979; Derral Herbst and Wayne Takeuchi in 1980 and 1988; Sheila Conant in 1983; and Marie Bruegmann in 1995. Each of these botanical inventories serve to illustrate the atoll's plant biota at that point in time. Combined together, the surveys reveal the many changes that have occurred over the past century.

METHODOLOGY

Our goal was to document, as completely as possible, all plant species located within the atoll. We did this by searching each island extensively, especially areas where introductions are likely to occur, such as sites inhabited by humans, and areas where rare plants were observed in the past. Each island was delineated into sectors. Maps of each island showing sectors are attached in the appendix of this report. We walked along transects through each sector, about 10 m apart from each other, using radios to help communicate. We recorded each plant species we observed within each sector and estimated its relative abundance in terms of rare, occasional, common, or dominant.

Spit Island was surveyed on April 1, 1999. Follow up surveys were also performed there on April 12, 1999 and June 23, 1999. Spit Island was treated as one sector. Eastern island was broken up into 10 sectors and surveyed on April 12, 1999 through April 19, 1999 and on April 26, 1999. Sand Island was broken up into 50 sectors and was surveyed from April 22, 1999 through May 21, 1999.

The appendix of this report includes a summary list of plants for all islands (our plant list follows the format used by M. Bruegmann (1998) during her survey performed in 1995), plant distribution by sector, island maps showing sectors used during the inventory, and distribution maps for the most invasive alien species. Plants which are new state or new island records, range extensions, notable rediscoveries, or unidentifiable were vouchered and pressed. These will be sent to Bishop Museum for confirmation / determination and archival. Documentation of these plants will then be published in the Bishop Museum Occasional Papers for 1999.

RESULTS

Overview -- Midway Atoll

Midway Atoll is the largest terrestrial surface among the Northwestern Hawaiian Islands, and has more species of plants than any other land mass in the Northwest Hawaiian Islands (Herbst & Wagner 1992; Mueller-Dombois & Fosberg 1998; Wagner *et al.* 1990). During our survey, 264 plant species were observed. In addition, 90 plant species known from Midway Atoll were not observed during this survey. This brings the total number of plant species ever recorded from the atoll to 354. Of the 264 species that were observed this year, 83 of them were new island records (previously not known from Midway Atoll),

all of these were observed on Sand Island. We collected and vouchered 48 of these to be sent to Bishop Museum. The remaining uncollected new island records still need to be vouchered. No new island records were made on Eastern Island, though we observed the range extension of several species, 2 of which were native species. Similarly, no new island records were made on Spit Island, but the range extensions of 11 plants were observed. 9 of these range extensions were vouchered to be sent to Bishop Museum, 3 were native species, 4 were alien, 1 was questionably indigenous, and 1 was unidentifiable. In addition, 1 notable rediscovery was made on Spit Island. The specimen was vouchered and will be sent to Bishop Museum also.

The need for frequent botanical surveys became apparent to both Bruegmann (1998) in 1995 and to us in 1999. Updated plant lists and records of current distribution allows management decisions to be based on more complete knowledge. Alien plants which may be harmful to Midway Atoll and other Northwestern Hawaiian Islands can be identified and addressed in a timely manner. Native plants which are rare in distribution, and often ephemeral in nature, can also be identified for propagation and out-planting to ensure their survival.

The discovery of numerous new island records, introduced both intentionally and unintentionally, highlighted the need to analyze the current plant importation and landscaping regulations. These regulations are currently being revised to decrease the potential for introductions and will also allow better documentation of intentional introductions. Many new harmful species were found early in their invasion process and in limited distributions. Some of these were controlled and, with proper follow up, should be successfully eliminated, saving valuable time and money in the future.

There is an opportunity to make protocols to decrease the potential spread of harmful species between islands in the atoll. This would not only be beneficial to Midway Atoll, but also to other atolls in the chain that have multiple islands, such as Pearl and Hermes Atoll and French Frigate Shoals. This atoll has the potential to serve as a model for other islands. It is a great place to refine protocols for decreasing the introduction and spread of weeds, restoration processes, control methods for invasive plants and animals, and much more.

Overview -- Sand Island

Sand Island has seen much change over the years. William A. Bryan described Sand Island in 1902 as, "little more than a barren, blinding heap of sand. On the top of most of these dunes a few hardy shrubs and grasses manage to subsist, and form the only relief for the eye in what is little else than a waste of shifting sand" (Bryan 1905). It is no longer a barren sand island. It is now a fully developed mini-city with a diverse plant biota.

This island has the highest diversity of alien plants of any other island in the atoll, or in the entire Northwestern Hawaiian Islands. Many plants have been introduced for ornament and food, while others have been introduced unintentionally on equipment or in soil. A total of 354 species have been recorded on Sand Island, of which 263 were observed on

Sand Island during this survey. Of these, 11 species were native, 248 species were alien, 2 were questionably indigenous, and 2 were unidentifiable. Of the 83 new island records, all were observed on Sand Island. For comparison, only 19 species have ever been recorded from Lisianski, a similar island to the southeast.

Despite this, Sand Island still has pockets of native vegetation, mostly concentrated near coastal sites. It has been demonstrated that removing weeds and planting native plants has a positive effect on these communities. These efforts should continue to be refined, especially in areas that are still relatively intact. The removal of rats has also had a positive effect for native plant species such as naupaka (*Scaevola sericea*) and nohu (*Tribulus cistoides*).

Overview -- Eastern Island

William A. Bryan described Eastern Island in 1902 as, "clothed in green down the beach." Unlike Sand Island, Eastern Island had a diverse native plant biota. Alien species began turning up on Eastern Island shortly after many alien plants were planted on Sand Island by the Cable Company and Pan American Airlines (Neff and DuMont 1955). Major changes occurred on Eastern during the battle of Midway when there were just as many people living on Eastern Island as Sand Island. The first runways were built on Eastern Island. Today, Eastern Island is a low sand island that has been bulldozed flat and paved. A large part of the island is now abandoned runway, the rest is open fields, dying ironwoods, roads, and sand beaches.

During our survey, we found a total of 35 plants were found on Eastern Island. Of these, 7 were native plants, 24 were alien plants, 1 was questionably indigenous, and 1 was unidentified. The native vegetation is found primarily on the coast, but can be found almost anywhere on the island, including abandoned runways. There is a ring of ironwood (*Casuarina*) along the north and west coast of the island, and *Verbesina* covers large areas of the island.

The runways are a mix of the common weeds and natives of Midway Atoll, especially *Dactyloctenium aegyptium*, *Boerhavia repens*, *Coronopus didymus*, *Fimbristylis cymosa*, and *Verbesina*. There are also some scattered *Brassica nigra* and *Tribulus cistoides*. The island is covered with predominantly *Verbesina* and lots of dead ironwood snags. In some of the open areas, *Verbesina* dominates along with *Lobularia*, *Cynodon*, and *Coronopus*. The recently forested areas with dying ironwoods found along the north coast, especially west of the pier often had *Boerhavia* and plants other than *Verbesina* growing under it. The roads have the same plants previously mentioned, plus *Spergularia*, which often forms mats. The beaches have the highest concentrations of native plants that begin with *Sesuvium*, *Lepturus*, and *Ipomoea* at the high water mark, with *Scaevola* and *Eragrostis variabilis* behind them.

Overview -- Spit Island

Spit island, with an area of about six acres, is the smallest and most pristine of the three islands in Midway atoll. It is the most similar to other pristine island of the Leeward

chain. There is a small pond in the south end of the island. The island is ephemeral and has been known to wash over and change shape from time to time. Some aerial photographs taken in the past show three Spit Islands, while others show two. Currently, there is one Spit Island.

In 1999, we found 26 species of plants, 9 were native, 15 were alien, 1 was questionably indigenous, and 1 was unidentified. In 1995, M. Bruegmann recorded 15 species from the island, 6 native and 9 alien. The initial survey on April 1, 1999 took about four hours. We had a subsequent follow up surveys while doing bird research on the island.

Of note is the increase in the number of plants found on the island. There were 11 more plant species in 1999 than in 1995, 3 native, 5 alien, 2 questionably indigenous, and 1 unidentifiable. Most of the range extensions were restricted to a single individual or just a couple of plants. We are not sure whether the increase in numbers is due to the fact that this winter was mild and high seas did not spill over the island as they occasionally do, whether they are being brought in by humans or birds, or whether they were missed in 1995. It is probably a combination of primarily the first two. We spent only one more hour there than the party in 1995 did and most of the new island records were in very small numbers.

NATIVE PLANTS

Native plants -- Midway Atoll

There were 12 native plant species found during this survey, three endemic to Hawai'i, and the remaining indigenous. Two questionably indigenous species were observed, 'uhaloa (*Waltheria indica*) and popolo (*Solanum americanum*). This questionable status makes it hard to make management recommendations for these species. We also had some trouble distinguishing the native 'ihi (*Portulaca lutea*) from the alien pigweed (*Portulaca oleracea*). The two species are similar and can not be distinguished unless flowers are present. In addition, the two plants hybridize readily. Because of the taxonomic quandary, even though a few flowers were observed during our surveys, the two were lumped into *Portulaca sp.*

Several native plants seen in previous surveys were not observed during this survey. Two plants observed during the 1995 survey, but not observed during this survey include koali 'awa (*Ipomoea indica*), occurring in coastal areas, and 'ahu 'awa (*Mariscus javanicus*), found in damper areas. 'Aki 'aki (*Sporobolus virginicus*), an indigenous grass common on sand dunes, was reported in 1931 by D. R. Chisholm, and has not been observed since. 'Ilima (*Sida fallax*) was observed on Sand Island in 1983 by Sheila Conant who made one collection at the west end of abandoned housing. It was also observed on Eastern Island in 1923 (Christophersen and Caum 1931), but was not observed during this survey. Water hyssop or 'ae 'ae (*Bacopa monnieri*) was recorded by V. J. Meagher in 1933, but was also not seen during this survey.

Several native plants previously known from Midway Atoll have not been seen since the 1960's and are probably extinct today. These include *Cenchrus agriminoides*, *Achyranthes atollensis*, and *Phyllostegia variabilis*. Other Federally listed species of concern were searched for, including popolo (*Solanum nelsonii*), 'anaunau (*Lepidium bidentatum o-waihiense*), and maia pilo (*Capparis sandwichiana*). Popolo (*Solanum nelsonii*) has declined dramatically in the Northwestern and Main Hawaiian Islands. It was not observed on Midway Atoll in 1995, however, reports of it were made in 1996 by Nanette Seto. During this survey, a small population of popolo was located on Spit Island. Fruit was collected and plants are being propagated to ensure the survival of this species on Midway Atoll. The other two species of concern were not observed. However, 'anaunau seeds were collected from plants on Pearl and Hermes Atoll and have been propagated at the US Fish and Wildlife Service nursery on Midway Atoll. There are also plans to acquire maia pilo seeds and perhaps *Bacopa monnieri* from the main islands for propagation and reintroduction.

Native Plants -- Sand Island

Of the 263 plants noted from Sand Island during this survey, 11 were native. Most of these native species occur in coastal areas. This may be due to less human disturbance and the aid of harsh winds and salt water. A common component of coastal areas is naupaka (*Scaevola sericea*). It is also seen occasionally inland and is being used in landscaping near buildings. In 1995, Bruegmann reported seeing very few seedlings and saplings, perhaps due to displacement of golden crown-beard (*Verbesina encelioides*). She also described seeing rat damage on adult plants. Earlier, in 1983, Apfelbaum et al. describes rats chewing on apical and lateral buds, causing such severe damage in places that they believed the naupaka would surely be eliminated (Apfelbaum et al. 1983). During the survey this year, numerous naupaka seedlings and saplings were observed along the coast. Adult naupaka plants appeared healthy and thriving. The increase in the vigor of adult plants and presence of seedlings and saplings may be attributed to the extinction of rats, which were last seen on Midway Atoll in 1997.

There are two native species observed on Sand Island during this survey that were not seen during the 1995 survey, nohu (*Tribulus cistoides*) and 'akulikuli (*Sesuvium portulacastrum*). Nohu (*Tribulus cistoides*) is a common component of littoral areas on other Northwestern Hawaiian Islands and is frequently used by sea birds for nesting sites and nesting material. Nohu is only occasional in coastal sites along south beach and at Frigate Point and occurs sparingly in few sites inland. This is perhaps another native species benefiting from the removal of rats. 'Akulikuli (*Sesuvium portulacastrum*) was first recorded from Midway Atoll on Spit Island in 1995 and was described as rare in distribution at the time. During this survey, it was also discovered on Sand Island growing at the edge of the Dump Pond and on the tip of Bulky Dump. Both species were brought into cultivation this year.

There are several other occasional to common species associated with the littoral zone. *Lepturus repens* stabilizes sand and occurs at the high-tide mark. 'Ena 'ena

(*Pseudognaphalium sandwicense* var. *sandwicense*) is particularly common in disturbed, compacted soils such as at the Fuel Farm. Alena (*Boerhavia repens*) is common along the coast and in areas inland as well. Pohuehue (*Ipomoea pes-caprae*) is common along the southern beach and has been out-planted in several coastal sites as well as inland. Bruegmann reported seeing only a small population of 'emoloa (*Eragrostis variabilis*) located at Frigate Point. Today, it is still the only remaining population of 'emoloa native to Midway Atoll, however, seeds have been gathered over the years from Laysan and plants have been out-planted widely in areas along the coast and inland. Propagation of seeds from the remaining Midway plants should be done to ensure the survival of the Midway genetics.

Only a small population of the native bunchgrass, *Eragrostis paupera*, was found on Sand Island, located in the gravel on the runway over run roads leading towards the dump pond. Seeds were gathered from Spit Island and are currently being propagated. It is not sure how this annual grass will respond to propagation and out-planting. This plant is becoming rare on the atoll and in the Northwestern Hawaiian Islands. It is also found on Pearl and Hermes Atoll. Hopefully, propagation and out-planting can ensure the survival of this species on Midway Atoll.

Certain native plants seemed to be increasing with certain human disturbances. For instance, 'ena 'ena (*Pseudognaphalium sandwicense* var. *sandwicense*) was found in disturbed areas. *Pycreus polystachyos* ssp. *polystachyos* also seemed to be common in wet areas that were frequently mowed. Button sedge (*Fimbristylis cymosa*) is common in the cracks of the runway and in coastal areas.

Native Plants -- Eastern Island

During this survey 7 native plant species were observed on Eastern Island. Native plants are found mainly in coastal areas, but can be found scattered about the entire island. Naupaka is the most conspicuous native plant, growing in clumps along the northwest and eastern shores. On Eastern Island, naupaka is seen supporting many nesting seabirds. Many rare plants that once thrived on Eastern Island are now either completely extinct or are no longer present on the island. Recently, *Solanum nelsonii* and *Lepidium bidentatum* var. *o-waihiense* were both brought into cultivation. These rare species can be reintroduced to the island. *Eragrostis variabilis* can be found scattered about the island as a result of restoration by the USFWS. There is a large patch inland on the southeast end of the island that now supports nesting Christmas shearwaters. It is also successfully spread about the island by digging out plants from the large patch and moving them to areas where there currently is none and by sites that are highly visible on tours.

Fimbristylis cymosa and *Boerhavia repens* can be found on the runways. Control efforts currently involve treating *Verbesina encelioides* while leaving natives to grow on the runways. *Lepturus repens* can be found along the coast, usually the closest plant to the water. *Sesuvium portulacastrum* is a recent colonizer of Eastern Island and can now be found in small patches in coastal sites. *Ipomoea pes-caprae* was found on the beach in the northeast corner of the island. Naupaka (*Scaevola sericea*) could be found almost

anywhere, but the greatest concentrations were near the coast, especially on the east side of the island. Naupaka is used by many different seabirds for nesting habitat. *Boerhavia repens* can be found almost anywhere, but was especially abundant on the runway and under dying ironwoods. Nohu (*Tribulus cistoides*) is found over most of the island, especially in with the *Scaevola* on the east end of the island where it forms thick mats. *Portulaca* is very variable in form and can be found most anywhere. It is not known if it is *P. lutea*, *P. oleracea*, or a hybrid of the two, as what appears to be both species and a gradient between them has been found.

Continued restoration stemming from areas with concentrations of natives plants will help return this island to a more natural state. This island has a few characteristics that may aid in restoration. For starters, the eradication of rats allows the proliferation of certain plant species, such as naupaka and nohu. Secondly, people no longer live on Eastern Island. This automatically decreases the diversity of plant species one would expect to find there. Thirdly, the island is relatively small with a few monotypic patches of *Verbesina*, *Brassica nigra*, and ironwood trees. Once the removal process of a species of invasive plant species is figured out, execution can be done all at once. This is demonstrated by the current mass removal of ironwood. And lastly, many native plants are beginning to colonize and spread on the island on their own.

Native Plants -- Spit Island

During our survey, 9 native plant species were observed on Spit Island. There are several native plants which are common to dominant on Spit Island. Alena (*Boerhavia repens*) is common to dominant in some areas. Mau'u 'aki'aki, button sedge (*Fimbristylis cymosa*) is common, especially in open areas. Two subspecies are sometimes recognized, subsp. *spathacea* and subsp. *umbellato-capitata*. Wagner et. al. 1990 report that "At best, these are weak subspecies still in the process of differentiation". Both subspecies and intermediates between the two were seen on Spit Island. For the purposes of this survey, we did not split the two. Naupaka (*Scaevola sericea*) is dominant in parts of the island, especially the northeast side. 'Akulikuli (*Sesuvium portulacastrum*) is common to dominant on Spit Island. 1995, M. Bruegmann classified 'akulikuli as rare, noting "one clump...was found in the interior of the island near the small pond" and adding "This taxon has not been previously reported from Midway Atoll". Since the time of first discovery in 1995, 'akulikuli has expanded its range to include most of the areas that are somewhat wet and is now common to dominant in some places, especially near the pond.

There are also native species occurring on Spit Island in less abundance. *Eragrostis paupera* occurs occasionally. This species is becoming rare in the Northwestern Hawaiian Islands. It also occurs at Pearl and Hermes Atoll and it is not known whether it still exists on Kure. It is a good candidate for propagation and out-planting to ensure the survival of this species in the Hawaiian Islands. Nohu (*Tribulus cistoides*) is found scattered throughout the island, mostly on the west side. This observation represent a new record for Spit Island. 'Ena'ena (*Pseudognaphalium sandwicense* var. *sandwicense*) is also a new record for Spit Island. A few small plants were found near the south end of the island. Another new record for Spit Island occasional in distribution is *Lepturus repens*.

A notable rediscovery of a federal species of concern, popo (*Solanum nelsonii*), was also made during the survey of Spit Island. This plant is rare in distribution. Only a few plants were observed on the north part of the island. Few small seedlings and juveniles were also observed. This observation represents a new record for Spit Island and a notable rediscovery of popo on Midway Atoll. This plant was not observed anywhere else during our survey. Since then, fruit has been collected and propagated for out-planting in hopes to ensure the survival of this species on Midway Atoll. Recently, seeds of *Lepidium bidentatum o-waihiense* were collected from Pearl and Hermes Atoll and propagated in the USFWS nursery on Midway Atoll. These plants can be out-planted on Spit Island and/or seeds could be sown directly in coral rubble or areas inland near the pond or elsewhere.

ALIEN PLANTS

Alien plants -- Midway Atoll

There were 248 alien species observed during this survey, 83 were new island records. Ironwood (*Casuarina equisetifolia*) and golden crown-beard (*Verbesina encelioides*) remain the dominant species and management concerns of Midway Atoll. Active control is being undertaken on both species. Many other invasive plant species, some new island records from this survey, exist in smaller distribution and are beginning to expand their range, including: sourbush (*Pluchea symphytifolia*), Guinea grass (*Panicum maximum*), Lantana (*Lantana camara*), New Zealand spinach (*Tetragonia tetragonioides*), ivy gourd (*Coccinia grandis*), buffel grass (*Cenchrus ciliaris*), sand bur (*Cenchrus echinatus*), sisal (*Agave sisalana*), haole koa (*Leucaena leucocephala*), Christmas berry (*Schinus terebinthifolius*), guava (*Psidium guava*), and African tulip tree (*Spathodea campanulata*). These species have been identified and mapped and are beginning to be controlled.

Some species, such as bristly fox tail (*Setaria verticillata*), sea grape (*Coccoloba uvifera*), and beach heliotrope (*Tournefortia argentea*) are moving between the islands in the atoll and between atolls in the Northwestern Hawaiian chain. With the collection of golden crown-beard (*Verbesina encelioides*) and sand bur (*Cenchrus echinatus*) on Pearl and Hermes Atoll this year, it is suspected that some species are spreading from Midway Atoll to other Northwestern Hawaiian Islands. Tighter quarantine and prevention protocols for Midway Atoll along with swift control of existing noxious weeds will help prevent future inter-atoll and intra-atoll spread of harmful alien species.

Alien Plants -- Sand Island

A total of 248 alien species were observed on Sand Island during this survey. Of the 248 introduced taxa observed, 83 were new island records, plants that were previously not known from Midway Atoll. Some of these new records were widespread while others were restricted to a single individual plant. Alien plants known from Sand Island range

from those that are not known to be invasive elsewhere and show no signs of becoming management concerns to those which are highly invasive and, if not controlled immediately, would become vast management concerns in the future. Some of the most invasive species are discussed below.

One example of an intentional introduction of an invasive weed is ivy gourd (*Coccinia grandis*). The single plant which was found was brought in and grown from seeds from Thailand. This plant is currently on the Hawai'i state noxious weed list and is aggressively naturalizing on the main Hawaiian islands where it smothers other vegetation through its rapid viney growth. Through early detection and control of this harmful plant, a potential catastrophe may have been avoided. It was apparent that there needed to be tighter controls on the importation of plants. While early detection and control are important, prevention is best. This spurred the revision of the plant importation and landscaping regulations which will hopefully decrease the number of introductions of harmful plant species to Midway Atoll.

Another new island record found during this survey is buffel grass (*Cenchrus ciliaris*). It is an example of a probably unintentional introduction of an aggressive alien species. This plant has rapidly colonized the lowlands of the main Hawaiian Islands and is a management concern at Kealia Pond National Wildlife Refuge on Maui. The buffel grass was found in a small area of land near the sea plane ramp. It was reported immediately and controlled by the Fish and Wildlife Service. Through continued follow up and monitoring, this harmful alien plant can be controlled from expanding throughout the atoll and other Northwestern Hawaiian Islands.

Several other harmful species turned up during our survey. New Zealand spinach (*Tetragonia tetragonioides*) is highly invasive in the Farallon Islands, California (Peter Pyle pers comm. 1999). It was discovered by Ramachandran Sudharshan near the Dump Pond. This collection represents a new island record for Midway Atoll. Another small patch of New Zealand spinach was found near the cart trail on South Beach. The patch near the Dump Pond has been controlled with herbicide and the few plants on South Beach were hand pulled, however, due to the large seed bank and persistence of this plant, follow up control measures will need to occur.

Sourbush (*Pluchea carolinensis*) was described in 1955 by Neff and DuMont as, "more widespread on Eastern Island than on Sand Island, but abundant on both. This weed species has taken over many open areas where the soil was disturbed by construction work, such as along the margins of runways, and now forms an almost impenetrable barrier to heights of four to five feet." Today, sourbush is more widespread on Sand Island and is dense in disturbed areas, especially near the Dump Pond. In this area, many seedlings, juveniles and adults of sourbush can be observed. There is also a large patch near the West Beach cart trails. An attached map shows locations of sourbush. Some plants have been controlled and the infestation is still relatively localized. However, sourbush is spreading rapidly and will increasingly become a management concern. As ironwood and other species are cleared, sourbush may have a chance to invade. Large

scale disturbances, such as removal of ironwoods, should include a plan to remove weeds, such as sourbush, from the area prior to the disturbance.

Chinese banyan (*Ficus microcarpa*) is spreading rapidly after the pollinator (a wasp) arrived sometime between 1960 and 1998. Many seedlings and juveniles can be seen sprouting on tree stumps, other trees, rooftops and buildings. This species is not only a threat to natural areas but also to historical buildings with its parasitic growth habit and ability to break through concrete. Seeds are probably being spread by Mynah birds. Several other *Ficus* spp. occur on Sand Island including, Indian banyan (*Ficus benghalensis*), Indian rubber tree (*Ficus elastica*), and *Ficus benjamina*. The wasps that pollinate these fig trees have not arrived on Midway yet and, as a result, the trees are not spreading. Once the pollinators arrive the trees will begin to spread and control will be much more difficult and costly. Removal of the trees now before the pollinators arrive is the most cost and time effective, but large *Ficus* trees can be beautiful and the trees near the Cable Housing really add to the scene. If people wanted to keep them, the trees could be allowed to grow as long as someone monitored for seedlings or the wasp. If either were found, the trees should be cut down before spreading.

Lantana (*Lantana camara*) is said to be so dense in the Galapagos that the petrels can no longer burrow in infested areas (Lloyd L. Loope pers. comm. 1999). On Sand Island, this thorny shrub is found scattered in several areas, but is nowhere found in high densities, yet. This noxious species is also invasive on the main Hawaiian Islands and has had many biological controls introduced to thwart its spread. Most of the biological controls are not present on Midway Atoll and if left unchecked, *Lantana* could spread rapidly. Some control measures have been taken to remove small patches of *Lantana*. A control plan is needed to tackle the few remaining patches of this harmful alien species before it spreads beyond control.

Haole koa (*Leucaena leucocephala*) is also an invasive alien species on Midway Atoll that has the potential to spread rapidly. It is similar to *Lantana* in that it is a highly invasive plant that has had many biological controls introduced to reduce its threat in the main Hawaiian Islands. At least one biocontrol, a psyllid made its way to Midway (Pers. obs.). Haole koa is somewhat widespread on Midway Atoll, but still remains fairly gettable. Some stands have been removed. Continued control is suggested.

Ironwood (*Casuarina equisetifolia*) was introduced to Sand Island in 1902 by the Pacific Cable Company for shade and ornament (Apfelbaum et al. 1983). Since then, it has spread rapidly on all three islands within the atoll and is currently a major management concern. Control has begun on all three islands ranging from mechanical removal of seedlings and small saplings to frilling large adult trees and applying herbicide. The latter method, used mainly on Eastern Island, has proven to be a hazard to birds and it is suggested that this method not be used in future control of ironwoods, especially in areas with lots of birds. An alternative method is to cut the tree down and treat the stump with an herbicide. This would lessen the potential strike hazard. In addition, chipping the felled trees would neatly dispose of debris and allow disturbed or out-planted sites to be

mulched, decreasing reinvasion by alien plants and increasing the ability of out-planted and relictual native plants to thrive by providing a cooler, moister environment with less competition from weeds. Most of Midway is accessible with a truck, presenting the unique opportunity for such a control/restoration strategy.

Golden crown-beard (*Verbesina encelioides*) also dominates much of the landscape on Sand Island. Golden crown-beard can have woody stems and grow to over two meters in height. These attributes are not similar to plants found on the main Hawaiian Islands where golden crown-beard is typically one meter in height without woody stems. It also has spread and dominated much more than anywhere else in the Hawaiian Islands (Wagner et al. 1990). There has been a large effort to control golden crown-beard on Sand Island. Both mechanical and chemical control has been done. In addition, a pre-emergent is being tested. Progress is being made, however, with golden crown-beard's large seed set and rapid dispersal and growth, it is a slow process. Golden crown-beard has spread to Kure and Pearl and Hermes Atolls. The close proximity of the other more pristine Northwestern Hawaiian Islands to Midway Atoll make managing harmful alien species on Midway relevant to the entire chain. Without monitoring and management, other harmful species are likely to spread beyond Midway's shores.

Alien Plants -- Eastern Island

There are still a few reminders of human habitation on Eastern island. Besides the large guns and scattered ammunition, a few spider lily (*Crinum asiaticum*) plants can be found persisting near the pier by the old galley, and sea grape (*Coccoloba uvifera*) trees can be seen on sand revetments and in open fields. Despite the dramatic disturbance, there are only 35 plants known from all of Eastern Island, much less than its neighbor Sand Island with 263 species. The large difference in number of plant species may be attributed to the much shorter time of occupation, and the length of time since occupation. Eastern Island, allowed fewer species on in the first place, and now has had the human factor basically removed. As a result of this, it now more closely resembles its original vegetated status than does Sand Island.

Crinum asiaticum was found persisting near the dock, one of the only ornamentals still present. There are a handful of alien grasses, the most dominant being *Cynodon dactylon*. Other species can be found scattered about include *Dactyloctenium aegyptium*, *Eleusine indica*, *Digitaria ciliaris*, and *Setaria verticillata*. The most common aster and the most dominant species on the island is *Verbesina encelioides*. Other asters include *Conyza*, which can be abundant on the runway, *Sonchus*, which is scattered about, and *Pluchea*, restricted to a few individuals.

With the recent control effort against *Casuarina*, *Tournefortia* is now the most common alien tree species, occurring in both coastal and inland sites. *Brassica nigra* is thick in spots, especially the eastern side of the island. *Lobularia maritima* blankets the ground in most parts of the island. *Casuarina* previously found over much of the island, especially the north coast, has recently been controlled in an attempt to restore the island vegetation. *Coccoloba uvifera* was planted on and near sand revetments and still persists.

Currently, the ironwood trees are scheduled to be removed during the next bird window. It will be a challenge to keep other invasive species, such as *Verbesina encelioides* and *Brassica nigra* from aggressively colonizing the newly opened up areas. However, there are numerous native plants, especially *Boerhavia repens*, *Eragrostis variabilis* and *Tribulus cistoides* that would be able to keep out weeds if allowed to fill in first.

Alien Plants -- Spit Island

The most dominant alien plant on Spit Island is tree heliotrope (*Tournefortia argentea*). It can be found dominating most of the island, except for areas that occasionally flood. Massive recruitment was seen on the south and northeast shores. Bruegmann (1995) states that *T. argentea* is uncommon and could be easily removed. In the four years since her survey, *T. argentea* has dramatically increased its range on the island and is certainly displacing native plants, such as naupaka (*Scaevola sericea*), and nesting habitat for gray backed terns.

There were also many ironwood (*Casuarina equisetifolia*) seedlings common on Spit Island. Apparently, the large ironwood trees were cut down in 1990 (Steve Barclay pers. comm. April 1, 1999), the stumps can still be found. Marie Bruegmann reported that at the time of the survey in 1995, "only one seedling was observed and immediately removed". In 1999, during the time of this survey, the ironwood seedlings numbered in the hundreds. Along with occasional pulling, the winter storms sometimes overtop the constantly shifting island and kill off some of the younger ironwood near the shore. The winter of 1998-1999 was mild and many seedling were able to become established.

Also common in areas of Spit Island is fingergrass (*Chloris petraea*) [*Eustachys petraea*]. This was probably misidentified as *Stenotaphrum* in 1995. We made the same mistake before fertile material was eventually found. We found no *Stenotaphrum* on the island. Wagner et. al. 1990 cite the distribution of *C. petraea* as adventive on Midway Atoll and French Frigate Shoals. This observation represents a range extension to Spit Island. It also represents a new naturalized record of the species in the State of Hawai'i, and on Midway Atoll. *C. petraea* is pretty thick in spots, especially the central area, and is certainly displacing native plants.

Golden crown beard (*Verbesina encelioides*) was found on most parts of the island, primarily away from the coast. Mature plants and seedlings were present. We pulled what we could, but it will take a lot more than what we were able to do in a few hours (see recommendations). This observation represents a range extension to Spit Island.

Two small patches of bristly fox tail (*Setaria verticillata*) were found and pulled. It had already gone to seed, so subsequent follow up will be required. This observation represents a range extension to Spit Island.

Other alien species common on Spit Island include: sweet alyssum (*Lobularia maritima*), horseweed (*Conyza canadensis*), a range extension for Spit Island and probably misidentified as *Conyza bonariensis* in the 1995 survey, and saltmarsh sand spurry (*Spergularia marina*), which can be found in low lying areas that probably flood. Beach wire grass (*Dactyloctenium aegyptium*) was observed as occasional to common. This observation represents a range extension to Spit Island. Swine cress (*Coronopus didymus*) was observed as rare to occasional. This observation represents a range extension to Spit Island. Sow thistle (*Sonchus oleraceus*) was observed as rare to occasional. Evening primrose (*Oenothera laciniata*) was observed as occasional.

There were a few alien species which we found in relatively small distributions. Many of these were pulled during the survey. Some of these species are invasive and a little control now could go a long way. Two sea grape (*Coccoloba uvifera*) plants were found, 1 sapling and 1 seedling. Both plants were pulled. This collection represents a range extension to Spit Island and a new naturalized record for the species on Midway Atoll. One seedling of Spanish needle (*Bidens* sp.) was found and pulled. We are not certain which species was found. This observation represents a new record for the genus on Spit Island. One small artillery plant (*Pilea microphylla*) was found and pulled. This observation represents a range extension to Spit Island. One plant of sourbush (*Pluchea symphytifolia*) was found and pulled.

There were two species found of questionable taxonomy. Thi, purslane (*Portulaca* sp.) is included here with the aliens, but it is not known which species occurs on Spit as no fertile material has yet been found. Both *P. lutea* and *P. oleracea* are historically known from Midway Atoll, but we have observed only *P. oleracea*. In addition, the two readily hybridize. A similar situation exists on Laysan Island where they suggest looking at genetics to determine the true identity of the *Portulaca* occurring there. Regardless of which species it is, this observation represents a range extension to the genus *Portulaca* on Spit Island. Popolo (*Solanum americanum*) is occasional in distribution. This species is questionably indigenous. This observation represents a range extension to Spit Island.

RECOMMENDATIONS

Recommendations -- Midway Atoll

This plant inventory provides a look at the vegetation at this point in time. Because the flora and fauna are constantly changing due to human activities, ongoing monitoring is recommended to provide managers with accurate updates of the flora and fauna. These surveys assist in formulating strategies to deal with known problems and also highlights newly emergent management concerns. Many incipient invaders were highlighted during this survey and controlled, possibly saving large amounts of resources in the future. Routine surveys are recommended to continue to highlight incipient invaders as well as assess ongoing restoration efforts.

Plant importation and landscaping regulations are currently being revised and should continue to be refined to decrease the number of introductions of harmful species that could spread and become management concerns. Protocols to reduce the spread of alien species between the islands within the atoll need to be formulated. These protocols could also be adopted by other atolls with multiple islands.

Habitat restoration should continue. Efforts should stem from coastal areas where native plants still remain partly due to harsh winds and salt spray that keep alien species at bay. Alien species should be removed from these areas to allow native plants to spread. Native plants should be continued to be propagated. Both common and rare species should be propagated and out-planted. Irrigation is often overlooked in restoration and strategies to efficiently water plants in restoration sites need to be formulated. Other Northwestern Hawaiian Islands can act as models to compose vegetation communities on Midway Atoll. The irrigated site at the Fuel Farm allows plantings to occur at any time, not just during winter months, provides plants a better chance for survival. Without an irrigation system, plants often die.

All in all, Midway Atoll has much to offer for any researcher. Although remote, Midway Atoll is only a plane ride away from Honolulu. There is still much to be learned and demonstrated. Ongoing restoration will return the islands to a more natural state and allow continued research of the processes of these remote islands. Below is a summary of our findings and recommendations by island.

Recommendations -- Sand Island

This island has more introduced plant species than any other island in the Northwestern Hawaiian Islands. In addition, it has received the largest and most sustained human presence and associated disturbance. As a result of this, a few native plant species are now gone forever, and a few are on the brink of extinction. In spite of this, the majority of native species known from Sand Island are still present, albeit in low numbers, and with the removal of alien plant species and restoration of native island vegetation currently being done by the USFWS, the future for the native vegetation on Sand Island looks good. In the long run, atoll vegetation appears to be rather resilient. Mueller-Dombois & Fosberg (1998) explain that the native flora of atolls and reef islands is limited to a few prominent plants. Distribution of these plants is facilitated, rather than limited, by the open ocean. Following natural disturbances, such as caused by tsunamis, these plants can reinvade atoll and reef islands. We may therefore conclude that the future of atoll vegetation is not in a dangerous predicament, provided there is no significant rise in sea level or a much further depletion of native species due to the human factor.

We found more plant species in the residential and town areas than in the natural and mowed areas away from town. Many of the plants in yards are used for ornament or for food, and many have been introduced from all over the world. Most of the plants we came across posed no great threat to Midway's unique plant and animal life, but some plants we found in gardens were highly invasive and some were unidentifiable. These private gardens are likely sources of the future weeds of Midway Atoll. The highly

invasive plants should be removed as soon as possible, and the entire garden area surrounding some residences should be removed and the fences taken down during times of tenant turnover. This would eliminate the potential for plants to spread beyond the confines of the garden while minimizing conflicts with residents. In conjunction with down sizing personal gardens is the community garden.

There were several gardens located near buildings throughout the town area of Sand Island. These gardens were not only found by the galley and homes, but near work buildings all over the island. Most gardens were well maintained, but some bordered on a semi-wild style of management. Most of the plants found within these gardens were harmless, however, a few species, such as bitter melon (*Momordica charantia*) and castor bean (*Ricinus communis*), though useful as food or medicine, have the potential to spread and become management concerns. The community garden is a good alternative, basically consolidating the satellite gardens into one large community garden which would allow growing opportunities for some of the more exotic species, and at the same time make it easier to monitor these questionable plants.

Recommendations -- Eastern Island

There are many opportunities for restoration on Eastern Island. The USFWS recently successfully eradicated rats from Eastern Island. This has led to greater breeding success for some birds, and has allowed some native plants to spread in range much further than when rats were present. There are a few relicual patches of coastal vegetation existing that would be good to pull the weeds away from, allowing room for the native vegetation to grow. Other areas to re-vegetate with native plants include visible areas that the tours go by, and areas that would enhance bird habitat. The introduced ants on the island can irritate birds and consume native insects. They are potentially eradicable on such a small island. The USFWS has a lot of work ahead of them, but if they continue like they have been, this island could soon be restored to a more natural state.

Recommendations -- Spit Island

Currently, there is no regular alien plant monitoring or control efforts in place on Spit Island. We recommend a regular alien plant monitoring and control campaign be instituted. Quarterly trips to Spit Island would probably suffice to keep the island relatively weed free. There are current alien species prevention measures which are in place which are aimed at limiting the movement of weed seeds between the islands in the atoll. Whenever possible, Spit Island is visited before Eastern Island. Also, during seal monitoring, different shoes are worn to each island. These practices should continue to minimize the intra-atoll spread of harmful weeds. Spit is the most pristine island in Midway Atoll, with most of the native plants represented, including the only known site of the federally listed species of concern *Solanum nelsonii* in Midway Atoll. We concur with previous botanists that there is still the potential to remove all alien species from Spit Island and that this should be a management priority. As is evidenced by the recent botanical inventories, this window of opportunity is quickly closing.

CONCLUSION

The purpose of the survey was to update the existing list of plants known from Midway Atoll. Our aim was to assist in finding additional introduced species, to identify potentially invasive species, to relocate, if possible, any rare native plant species not seen in recent surveys, and to provide information about distributions of plants which may have changed due to the removal of rats. This survey serves to illustrate the current mix of plants observed at Midway Atoll. Future surveys will help quantify the changes over time and serve to guide management decisions for Midway Atoll.

Along with the ongoing control of widespread noxious weeds such as golden crown-beard (*Verbesina encelioides*) and ironwood (*Casuarina equisetifolia*) newly emergent invasive species such as ivy gourd (*Coccinia grandis*) need to be identified and controlled in a timely manner. During this survey, about 80? new plant records were made, illustrating the amount of plants being introduced both intentionally and unintentionally. In the end, early detection and control is key, but prevention is best. Plant importation and landscaping rules are currently being revised to try to minimize the potential for introductions of harmful alien species in the future.

Harmful alien species were found and mapped and some were controlled. Two rare federal species of concern, popolo (*Solanum nelsonii*) and (*Lepidium bidentatum o-waihiense*) are currently being propagated for future out-planting. And certain plants, such as naupaka (*Scaevola sericea*) and nohu (*Tribulus cistoides*) were observed expanding in range, potentially attributed to the removal of rats. Coastal zones of Sand and Eastern Islands and the entire island of Spit are still relatively pristine in terms of native plants and would respond well to habitat restoration. Native plant communities occurring at other Northwestern Hawaiian Islands can be used as models for habitat restoration on Midway Atoll.

Midway Atoll has been greatly altered by humans during their occupation of this remote island. The islands mix of plants has changed dramatically over time and will undoubtedly continue to be dynamic. The current trend is toward creating more natural plant communities while sustaining comfort levels for human occupants and visitors. Hopefully, a happy balance between the two can be made.

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APPENDIX

Summary plant list for all islands	Section A
Raw data - Sand Island	Section B
Raw data - Eastern Island	Section C
Raw data - Spit Island	Section D
Distribution maps of invasive species on Sand Island	Section E

Plant List - Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		Status	Cult/Nat	Sand	Spit	Eastern
- = Not found	Alien = Introduced by humans to Midway atoll					
R = Rare	Native = Naturally occurring on Midway atoll					
O = Occasional						
C = Common	Nat = Naturalized - Self sustaining populations					
D = Dominant	Cult = Cultivated - Generally staying within the confines of the garden					
Pteridophytes						
Davalliaceae (Sword fern family)						
Nephrolepis multiflora	Sword fern	Alien	Cult	R	-	-
Dicksoniaceae (Tree fern family)						
Cibotium sp.	Tree fern	Alien	Cult	-	-	-
Polypodiaceae (Common fern family)						
Phymatosorus scolopendria	Laua'e	Alien	Cult	-	-	-
Psilotaceae (Psilotum family)						
Psilotum nudum	Moa	Native ?	?	-	-	-
Gymnospermae						
Araucariaceae (Araucaria family)						
Araucaria heterophylla	Norfolk island pine	Alien	Cult	O	-	-
Cupressaceae (Cypress family)						
Cupressus sp.	Cypress tree	Alien	Cult	R	-	-
Cycadaceae (Cycad family)						
Cycas circinalis	Sago palm	Alien	Cult	O	-	-
Cycas revoluta	Sago palm	Alien	Cult	-	-	-
Monocotyledonae						
Agavaceae (Agave family)						
Agave attenuata		Alien	Cult	R	-	-
Agave sisalana	Sisal	Alien	Nat	R	-	-
Cordyline fruticosa	Ti leaf	Alien	Cult	R	-	-
Cordyline sp.		Alien	Cult?	-	-	-
Draceana fragrans		Alien	Cult	R	-	-
Draceana marginata	Money tree	Alien	Cult	R	-	-
Draceana sp.	Pineapple draceana	Alien	Cult	R	-	-
Sansevieria trifasciata	Mother in law toungue	Alien	Nat	O	-	-
Unknown small agave ?		Alien	Cult	R	-	-
Aloeaceae (Aloe family)						
Aloe vera	Aloe	Alien	Cult	R/O	-	-
Araceae (Taro family)						
Alocasia cucullata	Chinese taro	Alien	Cult	-	-	-
Alocasia macrorrhiza	'Ape	Alien	Nat	R	-	-
Anthurium andraeanum	Anthurium	Alien	Cult	-	-	-

Plant List - Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		Status	Cult/Nat	Sand	Spit	Eastern
Caladium bicolor	Caladium	Alien	Cult	-	-	-
Colocasia esculenta	Taro	Alien	Cult	-	-	-
Dieffenbachia sp.	Dumb cane	Alien	Cult	R	-	-
Epipremnum pinnatum	Golden pothos	Alien	Cult	R/O	-	-
Monstera deliciosa	Monstera	Alien	Cult	R	-	-
Philodendron sp.	Philodendron	Alien	Cult	-	-	-
Syngonium polophyllum	Syngonium	Alien	Cult	R/O	-	-
Syngonium with divided leaves		Alien	Cult	O	-	-
Xanthosoma sp.	Ape	Alien	Cult	-	-	-
Arecaceae (Palm family)						
Cocos nucifera	Coconut	Alien	Cult	O	-	-
Phoenix sp.	Date palm	Alien	Cult	-	-	-
Pritchardia sp.	Loulu palm	Alien	Cult	R	-	-
Roystonea sp.	Royal palm	Alien	Cult	-	-	-
Vietchia merilii ?	Manilla palm	Alien	Cult	R	-	-
Bromeliaceae (Bromeliad family)						
Ananas comosus	Pineapple	Alien	Cult	R	-	-
Cannaceae (Canna family)						
Canna indica	Canna	Alien	Cult	R/O	-	-
Commelinaceae (Spiderwort family)						
Commelina diffusa	Honohono	Alien	Nat	-	-	-
Dichorisandra thyiflora	Blue ginger	Alien	Cult	-	-	-
Tradescantia [Rhoeo] spathacea	Oyster plant	Alien	Cult	O	-	-
Tradescantia sp.	Unknown day flower	Alien	Cult	R	-	-
Tradescantia zebrina	Wandering jew	Alien	Cult	R/O	-	-
Cyperaceae (Sedge family)						
Cyperus alterifolius ssp. flabelliformis	Umbrella plant	Alien	Nat	O	-	-
Cyperus papyrus	Papyrus	Alien	Cult	-	-	-
Cyperus rotundus	Purple nut sedge	Alien	Nat	O/C	-	-
Fimbristylis cymosa	Button sedge	Native	Nat	O/C	C	O
Mariscus javanicus	Ahu'awa	Native	Nat	-	-	-
Pycreus polystachyos ssp. polystachyos		Native	Nat	O	-	-
Liliaceae (Lily family)						
Allium cepa	Onion	Alien	Cult	-	-	-
Allium fistulosum	Green onion	Alien	Cult	R	-	-
Allium porrum	Leek	Alien	Cult	R	-	-
Allium sativum	Garlic	Alien	Cult	R	-	-
Allium schoenoprasum	Chive	Alien	Cult	R	-	-
Asparagus setaceus	Asparagus fern	Alien	Cult	R/O	-	-
Chlorophytum comosum	Spider / bracket plant	Alien	Cult	R/O	-	-
Crinum asiaticum	Crinum lily	Alien	Cult	O	-	R
Hemerocallis sp.	Day lily	Alien	Cult	-	-	-
Hippeastrum sp.	Amaryllis	Alien	Cult	-	-	-
Pancratium littorale	Spider lily	Alien	Cult	-	-	-

Plant List - Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		Status	Cult/Nat	Sand	Spit	Eastern
??	Unknown liliaceae	Alien	Cult	R	-	-
Musaceae (Banana family)						
Heliconia psittacorum	Heliconia	Alien	Cult	-	-	-
Musa x paradisiaca	Banana	Alien	Cult	R/O	-	-
Strelitzia reginae	Bird of paradise	Alien	Cult	R	-	-
Orchidaceae (Orchid family)						
Vanda sp.	Vanda orchid	Alien	Cult	-	-	-
Various spp.	Unknown orchids	Alien	Cult	-	-	-
Pandananaceae (Screwpine family)						
Pandanus tectorius	Hala, screwpine	Alien	Cult	R	-	-
Poaceae (Grass family)						
Ammophila arenaria	European beachgrass	Alien	Nat	-	-	-
Bothriochloa pertusa	Pitted beard grass	Alien	Nat	O	-	-
Brachiaria mutica	California grass	Alien	Nat	R	-	-
Bromus willdenowii	Prairie grass	Alien	Nat	O	-	-
Cenchrus agrimonioides var. laysanensis	Native bur grass	Native	Nat	-	-	-
Cenchrus ciliaris	Buffel grass	Alien	Nat	R	-	-
Cenchrus echinatus	Sand bur	Alien	Nat	O	-	-
Chloris barbata	Swollen finger grass	Alien	Nat	R	-	-
Chloris divaricata	Star grass	Alien	Nat	R	-	-
Chloris petraea		Alien	Nat	O/C	C	R
Chloris virgata	Feather finger grass	Alien	Nat	R	-	-
Cymbopogon citratus	Lemon grass	Alien	Cult	R	-	-
Cynodon dactylon	Bermuda grass	Alien	Nat	C/D	-	O/C
Dactyloctenium aegyptium	Beach wire grass	Alien	Nat	C	C	O/C
Digitaria ciliaris	Henry's crab grass	Alien	Nat	O	-	O
Digitaria insularis	Sour grass	Alien	Nat	R/O	-	-
Eleusine indica	Goose grass	Alien	Nat	C	-	O
Eragrostis paupera	Native bunch grass	Native	Nat	R	O	-
Eragrostis tenella	Love grass	Alien	Nat	C	-	-
Eragrostis variabilis	Emaloa, Kawelu	Native	Nat	O	-	R/O
Hordeum leporinum	Barley	Alien	Nat	-	-	-
Leptochloa uninervia ?	Sprangletop	Alien	Nat	R	-	-
Lepturus repens		Native	Nat	O	O	O
Melinis [Rynchelytrum] repens	Natal red top	Alien	Nat	R	-	-
Panicum maximum	Guinea grass	Alien	Nat	R	-	-
Paspalum setaceum ?		Alien	Nat	C	-	-
Paspalum urvillei	Vasey grass	Alien	Nat	O	-	-
Poa annua	Blue grass	Alien	Nat	O	-	-
Polypogon interruptus	Ditch polypogon	Alien	Nat	R/O	-	-
Polypogon monspeliensis	Rabbitfoot grass	Alien	Nat	O	-	-
Setaria verticillata	Bristly foxtail	Alien	Nat	O/C	R/O	O
Sporobolus sp. africanus ?	African dropseed	Alien	Nat	C	-	-
Sporobolus indicus	Indian dropseed	Alien	Nat	-	-	-
Sporobolus pyramidatus		Alien	Nat	-	-	-
Sporobolus virginicus	Aki'aki, Beach dropseed	Native	Nat	-	-	-

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		Status	Cult/Nat	Sand	Spit	Eastern
<i>Stenotaphrum secundatum</i>	St. Augustine/buffalo grass	Alien	Nat	C	-	-
<i>Vulpia myuros</i>	Fox/rat tail fescue	Alien	Nat	-	-	-
<i>Zea mays</i>	Corn	Alien	Cult/Nat	R	-	-
Unknown grass	Holcus like	Alien	Nat	R	-	-
Unknown grass	Andropogon virg. like	Alien	Nat	R	-	-
Unknown grass	By seaplane ramp field	Alien	Nat	R	-	-
Zingiberaceae (Ginger family)						
<i>Alpinia zerumbet</i>	Shell ginger	Alien	Cult	-	-	-
<i>Hedychium gardnerianum</i>	Kahili ginger	Alien	Cult	-	-	-
Unknown zingiber	Galang ?	Alien	Cult	R	-	-
Dicotyledonae						
Acanthaceae (Acanthus family)						
<i>Asystasia gangetica</i>	Chinese violet	Alien	Nat	-	-	-
<i>Odontonema strictum</i>	Odontonema	Alien	Cult	-	-	-
<i>Ruellia brittoniana</i>	Ruellia	Alien	Nat	R	-	-
Aizoaceae (Carpetweed family)						
<i>Sesuvium portulacastrum</i>	'Akulikuli	Native	Nat	R	C	R
<i>Tetragonia tetragonioides</i>	New Zealand spinach	Alien	Nat	R	-	-
Amaranthaceae (Amaranth family)						
<i>Achyranthes atollensis</i>		Alien	Nat	-	-	-
<i>Alternanthera tenella</i>	Joyweed	Alien	Nat	-	-	-
<i>Amaranthus dubius</i>	Pakai	Alien	Nat	-	-	-
<i>Amaranthus hybridus</i>	Green amaranth	Alien	Nat	-	-	-
<i>Amaranthus lividus</i> ssp. <i>polygonoides</i>	Slender amaranth	Alien	Nat	-	-	-
<i>Amaranthus spinosus</i>	Spiny pigweed	Alien	Nat	R/O	-	-
<i>Amaranthus viridis</i>	Slender amaranth	Alien	Nat	- ?	-	-
<i>Amaranthus</i> sp.	Unknown amaranth	Alien	Nat	C	-	-
<i>Gomphrena globosa</i>	Globe amaranth	Alien	Cult	R	-	-
Anacardiaceae (Mango family)						
<i>Mangifera indica</i>	Mango	Alien	Cult	-	-	-
<i>Schinus terebinthifolius</i>	Christmas berry	Alien	Cult/Nat	R	-	-
Apiaceae (Carrot family)						
<i>Anethum graveolens</i>	Dill	Alien	Cult/Nat	R	-	-
<i>Ciclospermum leptophyllum</i>	Fine leaved celery	Alien	Nat	C	-	-
<i>Daucus carota</i>	Carrot	Alien	Cult	R	-	-
<i>Petroselinum crispum</i>	Parsley	Alien	Cult	O	-	-
??	Cilantro	Alien	Cult	R	-	-
Apocynaceae (Periwinkle family)						
<i>Allamanda cathartica</i>	Allamanda	Alien	Cult	-	-	-
<i>Carissa macrocarpa</i>	Natal plum	Alien	Cult	-	-	-
<i>Cascabella thevetia</i>	Be still tree	Alien	Cult/Nat	O	-	-
<i>Catharanthus roseus</i>	Rosy periwinkle	Alien	Cult	-	-	-
<i>Ervatamia</i> sp.	Crape jasmine	Alien	Cult	-	-	-

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		Status	Cult/Nat	Sand	Spit	Eastern
Nerium oleander	Oleander	Alien	Cult	O	-	-
Plumeria obtusa	Singapore plumeria	Alien	Cult	R	-	-
Plumeria rubra	Red plumeria, frangipani	Alien	Cult	O	-	-
Araliaceae (Ginseng family)						
Polyscias guilfoylei	Panax	Alien	Cult	R	-	-
Schefflera actinophylla	Octopus tree	Alien	Cult/Nat	R	-	-
Asteraceae (Daisy family)						
Arctium lappa	Gobo, burdock	Alien	Cult	-	-	-
Bidens alba/pilosa	Unsure which one/both	Alien	Nat	C	R	R
Calypocarpus vialis		Alien	Nat	O	-	-
Chrysanthemum ?	Chrysanthemum	Alien	Cult	R	-	-
Conyza bonariensis	Hairy horseweed	Alien	Nat	C	-	-
Conyza canadensis	Horseweed	Alien	Nat	C	C	C
Coreopsis ?	Calliopsis	Alien	Cult	R	-	-
Cosmos ?	Cosmos	Alien	Cult	R	-	-
Gamochaeta purpurea		Alien	Nat	-	-	-
Helianthus annuus	Sunflower	Alien	Cult	-	-	-
Lactuca sativa	Lettuce	Alien	Cult	R/O	-	-
Pluchea x fosbergii	Hybrid pluchea	Alien	Nat	-	-	-
Pluchea indica	Indian pluchea	Alien	Nat	-	-	-
Pluchea symphytifolia [odorata]	Sour bush	Alien	Nat	O	-	R/O
Pseudognaphalium sandwicense var. sandw	Ena'ena	Native	Nat	C	R	-
Sonchus oleraceus	Sow thistle	Alien	Nat	C	R/O	O
Tagetes sp.	Marigold	Alien	Cult	R	-	-
Tridax procumbens	Coat buttons	Alien	Nat	R/O	-	-
Verbesina encelioides	Golden crown beard	Alien	Nat	D	O	D
Wedelia trilobata	Wedelia	Alien	Nat	-	-	-
Xanthium stumarium var. candense	Cocklebur	Alien	Nat	-	-	-
Unknown aster		Alien	Cult	R	-	-
Zinnia sp.	Large zinnia	Alien	Cult	R	-	-
Zinnia peruviana ?	Small zinnia	Alien	Cult	R	-	-
? ?	Artichoke	Alien	Cult	R	-	-
Balsaminaceae (Impatiens family)						
Unknown impatiens?	Balsam, candlestick plant	Alien	Cult	R	-	-
Basellaceae (Basella family)						
Basella alba	Ceylon spinach	Alien	Cult	R	-	-
Bignonaceae (Bignonia family)						
Spathodea campanulata	African tulip tree	Alien	Cult	R	-	-
Tabebuia sp.		Alien	Cult	R	-	-
Boraginaceae (Heliotrope family)						
Cordia sebestena	Kou haole	Alien	Cult	R	-	-
Heliotropium procumbens var. depressum		Alien	Nat	C	-	R/O
Tournefortia argentea	Tree heliotrope	Alien	Nat	O	C/D	O/C

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		Status	Cult/Nat	Sand	Spit	Eastern
Brassicaceae (Mustard family)						
Brassica nigra	Black mustard	Alien	Nat	R	-	O/C
Brassica sp.	Purple leaved cabbage	Alien	Cult	R	-	-
Brassica sp.	Green leaved cabbage	Alien	Cult	R	-	-
Brassica sp.	Broccoli	Alien	Cult	R	-	-
Brassica sp.	Cauliflower	Alien	Cult	R	-	-
Capsella rubella	Shepard's purse	Alien	Nat	O	-	-
Coronopus didymus	Swine cress	Alien	Nat	C	R/O	O/C
Lepidium bidentatum var. o wiahiense	Anaunau	Native	Nat	-	-	-
Lepidium virginicum	Pepper grass	Alien	Nat	C	-	-
Lobularia maritima	Sweet alyssum	Alien	Nat	D	C/D	C/D
Raphanus sativus	Radish	Alien	Cult	R	-	-
? ?	Pak? Choy	Alien	Cult	R	-	-
Cactaceae (Cactus family)						
Epiphyllum oxypetalum	Gooseneck cactus	Alien	Nat	R	-	-
Hylocereus undatus	Night blooming cereus	Alien	Cult	-	-	-
Opuntia cochenillifera	Cochineal cactus	Alien	Cult	O	-	-
? ?	Pencil like cactus	Alien	Cult	R	-	-
Capparaceae (Caper family)						
Capparis sandwichiana	Maia pilo, pua pilo	Native	Nat	-	-	-
Caricaceae (Papaya family)						
Carica papaya	Papaya	Alien	Cult	O	-	-
Caryophyllaceae (Pink family)						
Cerastium fontanum var. triviale	Common mouse ear	Alien	Nat	R	-	-
Dianthus caryophyllus	Carnation	Alien	Cult	R	-	-
Sagina decumbens ?	Pearlwort	Alien	Nat	O	-	-
Spergularia marina	Saltmarsh sand spurry	Alien	Nat	O	C	O
Stellaria media	Chickweed	Alien	Nat	C	-	-
Casuarinaceae (Casuarina family)						
Casuarina equisetifolia	Ironwood	Alien	Nat	D	O	O
Casuarina glauca	Longleaf ironwood	Alien	Nat	R	-	-
Chenopodiaceae (Goosefoot family)						
Chenopodium murale	Goosefoot	Alien	Nat	O	-	-
Spinacia oleracea	Spinach	Alien	Cult	R	-	-
Clusiaceae (Mangosteen family)						
Calophyllum inophyllum	Kamani	Alien	Cult	R	-	-
Clusea rosea	Autograph tree	Alien	Cult	-	-	-
Combretaceae (Indian almond family)						
Conocarpus erectus	Buttonwood	Alien	Cult	R	-	-
Terminalia catappa	False kamani	Alien	Nat	O	-	-
Convolvulaceae (Morning glory family)						

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		Status	Cult/Nat	Sand	Spit	Eastern
<i>Ipomoea aquatica</i>	Swamp cabbage	Alien	Cult	R	-	-
<i>Ipomoea batatas</i>	Sweet potato	Alien	Cult	R	-	-
<i>Ipomoea indica</i>	Koali awa	Native	Nat	-	-	-
<i>Ipomoea pes-caprae</i> ssp. <i>brasiliensis</i>	Beach morning glory	Native	Nat	O	-	R
<i>Ipomoea</i> sp. <i>pupurea</i> ?	Garden morning glory	Alien	Nat	R	-	-
<i>Ipomoea triloba</i>	Little bell	Alien	Nat	-	-	-
<i>Merrimia tuberosa</i>	Wood rose	Alien	Cult	-	-	-
Crassulaceae (Stonecrop family)						
<i>Crassula</i> sp.	Stonecrop	Alien	Cult	R	-	-
<i>Kalanchoe daigremontiana</i> x <i>tubiflora</i>		Alien	Cult	-	-	-
<i>Kalanchoe pinnata</i>	Air plant	Alien	Nat	R	-	-
<i>Kalanchoe tubiflora</i>	Chandelier plant	Alien	Cult	R	-	-
Unknown crassulaceae ?		Alien	Cult	R	-	-
Cucurbitaceae (Gourd family)						
<i>Coccinia grandis</i>	Ivy gourd	Alien	Cult/Nat	R	-	-
<i>Citrullus vulgaris</i>	Watermelon	Alien	Cult	R	-	-
<i>Cucumis melo</i> var. <i>cantalupensis</i>	Cantaloupe	Alien	Cult	R	-	-
<i>Cucumis sativus</i>	Cucumber	Alien	Cult	R	-	-
<i>Cucurbita pepo</i>	Squash, zucchini	Alien	Cult	R	-	-
<i>Momordica charantia</i>	Bitter melon, Balsam pear	Alien	Cult/Nat	O	-	-
??	Unknown gourd	Alien	Cult	R	-	-
??	Canary melon	Alien	Cult	R	-	-
Euphorbiaceae (Spurge family)						
<i>Acalypha wilksiana</i>	Beefsteak plant	Alien	Cult	R	-	-
<i>Breynia disticha</i> var. <i>rosi-picta</i>	Snow bush	Alien	Cult	-	-	-
<i>Chamaesyce hirta</i>	Hairy spurge	Alien	Nat	C	-	-
<i>Chamaesyce hypericifolia</i>	Graceful spurge	Alien	Nat	O/C	-	R
<i>Chamaesyce hyssopifolia</i>		Alien	Nat	-	-	-
<i>Chamaesyce maculata</i>		Alien	Nat	-	-	-
<i>Chamaesyce prostata</i>	Small ground fig	Alien	Nat	O/C	-	R/O
<i>Chamaesyce</i> sp. ?	Middle cham. ?	Alien	Nat	O/C	-	-
<i>Codiaeum variegatum</i> var. <i>pictum</i>	Croton	Alien	Cult	R	-	-
<i>Euphorbia cyathopora</i>	Wild poinsettia	Alien	Nat	O/C	-	R
<i>Euphorbia heterophylla</i>		Alien	Nat	-	-	-
<i>Euphorbia peplus</i>	Petty spurge	Alien	Nat	C	-	-
<i>Euphorbia pulcherrima</i>	Poinsettia	Alien	Cult	R	-	-
<i>Pedilanthus tithymaloides</i>	Slipper flower	Alien	Cult	R	-	-
<i>Ricinus communis</i>	Castor bean	Alien	Nat	O	-	-
Unknown euphorb 1 (<i>Pedilanthus</i>)	Big cactus like	Alien	Cult	R	-	-
Unknown euphorb 2 (<i>Pedilanthus</i>)	Like 1, but different	Alien	Cult	R	-	-
Fabaceae (Pea family)						
<i>Acacia farnesiana</i>	Klu	Alien	Nat	-	-	-
<i>Albizia lebbbeck</i>	Siris tree	Alien	Nat	R	-	-
<i>Cassia</i> sp.		Alien	Cult	-	-	-
<i>Crotolaria incana</i>	Fuzzy rattle pod	Alien	Nat	R/O	-	-
<i>Crotolaria pallida</i>	Rattle pod	Alien	Nat	R	-	-

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		Status	Cult/Nat	Sand	Spit	Eastern
<i>Delonix regia</i>	Royal poinciana	Alien	Cult	R	-	-
<i>Desmanthus virgatus</i> [pernambucanus]	Virgate / slender mimosa	Alien	Nat	O	-	-
<i>Desmodium sandwicense</i>	Spanish clover	Alien	Nat	-	-	-
<i>Erythrina variegata</i> var. <i>orientalis</i>	Tiger's claw	Alien	Cult	R	-	-
<i>Glycine soya</i>	Soy bean	Alien	Cult	-	-	-
<i>Leucaena leucocephala</i>	Koa haole	Alien	Nat	O	-	-
<i>Medicago lupulina</i>	Black medic	Alien	Nat	C	-	-
<i>Medicago polymorpha</i>	Bur clover	Alien	Nat	O	-	-
<i>Medicago sativa</i>	Alfalfa	Alien	Nat	-	-	-
<i>Melilotus alba</i>	White sweet clover	Alien	Nat	R	-	-
<i>Melilotus indica</i>	Yellow sweet clover	Alien	Nat	O/C	-	-
<i>Phaseolus vulgaris</i>	Common / bush bean	Alien	Nat	R	-	-
<i>Pithecellobium dulce</i>	Opiuma, Manila tamarind	Alien	Cult	R	-	-
<i>Prosopis pallida</i>	Kiawe	Alien	Cult	-	-	-
<i>Samanea saman</i>	Monkey pod	Alien	Cult	-	-	-
<i>Senna surattensis</i>	Kolomona	Alien	Cult	-	-	-
<i>Sesbania grandiflora</i>	Sesban, drumstick tree	Alien	Cult	R/O	-	-
<i>Tamarindus indica</i> ?	Tamarind	Alien	Cult	R	-	-
? ?	Unknown bean ?	Alien	Cult	-	-	-
? ?	Unknown pea ?	Alien	Cult	R	-	-
Unknown fabaceae	Vigna or Canavalia ?	?	Nat	R	-	-
Gentianaceae (Gentian family)						
<i>Centaurium erythraea</i> ssp. <i>erythraea</i>	Bitter herb	Alien	Nat	R	-	-
Geraniaceae (Geranium family)						
<i>Pelargonium hortorum</i>	Fish geranium	Alien	Cult	R	-	-
Goodeniaceae (Goodenia family)						
<i>Scaevola sericea</i>	Naupaka kahakai	Native	Nat	C/D	D	C
Lamiaceae (Mint family)						
<i>Majorana hortensis</i>	Sweet marjoram	Alien	Cult	R	-	-
<i>Mentha</i> sp.	Mint	Alien	Cult	R	-	-
<i>Ocimum basilicum</i>	Basil	Alien	Cult	R	-	-
<i>Phyllostegia variabilis</i>		Native	Nat	-	-	-
<i>Plectranthus scutellarioides</i>	Coleus	Alien	Cult	-	-	-
<i>Stachys arvensis</i>	Staggerweed	Alien	Nat	-	-	-
Lauraceae (Laurel family)						
<i>Persea americana</i>	Avocado	Alien	Cult	R	-	-
Malvaceae (Mallow family)						
<i>Abutilon grandifolium</i>	Hairy abutilon	Alien	Nat	R/O	-	-
<i>Hibiscus esculentus</i>	Okra	Alien	Cult	-	-	-
<i>Hibiscus rosa-sinensis</i>	Red hibiscus	Alien	Cult	O	-	-
<i>Hibiscus tiliaceus</i>	Hau	Alien	Cult/Nat	O	-	-
<i>Hibiscus</i> sp.	Unknown hibiscus	Alien	Cult	-	-	-
<i>Malva parviflora</i>	Cheese weed	Alien	Nat	O	-	-
<i>Malvastrum coromandelianum</i> spp. <i>coromand</i>	False mallow	Alien	Nat	O	-	-

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		Status	Cult/Nat	Sand	Spit	Eastern
Malvaviscus arboreus	Turks cap hibiscus	Alien	Cult/Nat	R/O	-	-
Sida fallax	'Ilima	Native	Nat	-	-	-
Sida rhombifolia	Cuba jewt	Alien	Nat	R	-	-
Thespesia populnea	Milo	Alien	Cult	R	-	-
Moraceae (Mulberry family)						
Ficus benghalensis	Indian banyan	Alien	Cult	R	-	-
Ficus benjamina		Alien	Cult	R/O	-	-
Ficus elastica	Indian rubber tree	Alien	Cult	R	-	-
Ficus microcarpa	Chinese banyan	Alien	Nat	O	-	-
Ficus sp.	Unknown ficus	Alien	Cult	R	-	-
Morus alba	White mulberry	Alien	Cult	O	-	-
Myrtaceae (Myrtle family)						
Eugenia uniflora	Suriname cherry	Alien	Cult	R	-	-
Psidium guajava	Guava	Alien	Cult	R	-	-
Punica granatum	Pomegranite	Alien	Cult	-	-	-
Nyctaginaceae (Four o'clock family)						
Boerhavia repens	Alena	Native	Nat	C	C/D	C
Bougainvillea spectabilis	Bougainvillea	Alien	Cult	R/O	-	-
Mirabilis jalapa	Four o'clock	Alien	Nat	R/O	-	-
Oleaceae (Olive family)						
Jasminium sambac	Pikake	Alien	Cult	-	-	-
Noronhia emarginata	Madagascar olive	Alien	Cult	R	-	-
Olea europaea ssp. africanus	African olive ?	Alien	Cult	R	-	-
Onagraceae (Evening primrose family)						
Oenothera laciniata	Evening primrose	Alien	Nat	C	R/O	R
Oxalidaceae (Wood sorrel family)						
Oxalis corniculata	Yellow wood sorrel	Alien	Nat	O/C	-	-
Oxalis corymbosa	Shamrock	Alien	Nat	O	-	-
Passifloraceae (Passion flower family)						
Passiflora edulis	Liliko'i	Alien	Cult	-	-	-
Piperaceae (Pepper family)						
Peperomia sp. obtusifolia ?	Alien peperomia	Alien	Cult	R	-	-
Plantaginaceae (Plantain family)						
Plantago lanceolata	Narrow leaved plantian	Alien	Nat	O	-	-
Plantago major	Common plantain	Alien	Nat	R	-	-
Plumbaginaceae (Leadwort family)						
Plumbago auriculata	Plumbago	Alien	Cult	-	-	-
Polygonaceae (Buckwheat family)						
Antigonon leptopus	Mexican creeper	Alien	Cult/Nat	R	-	-

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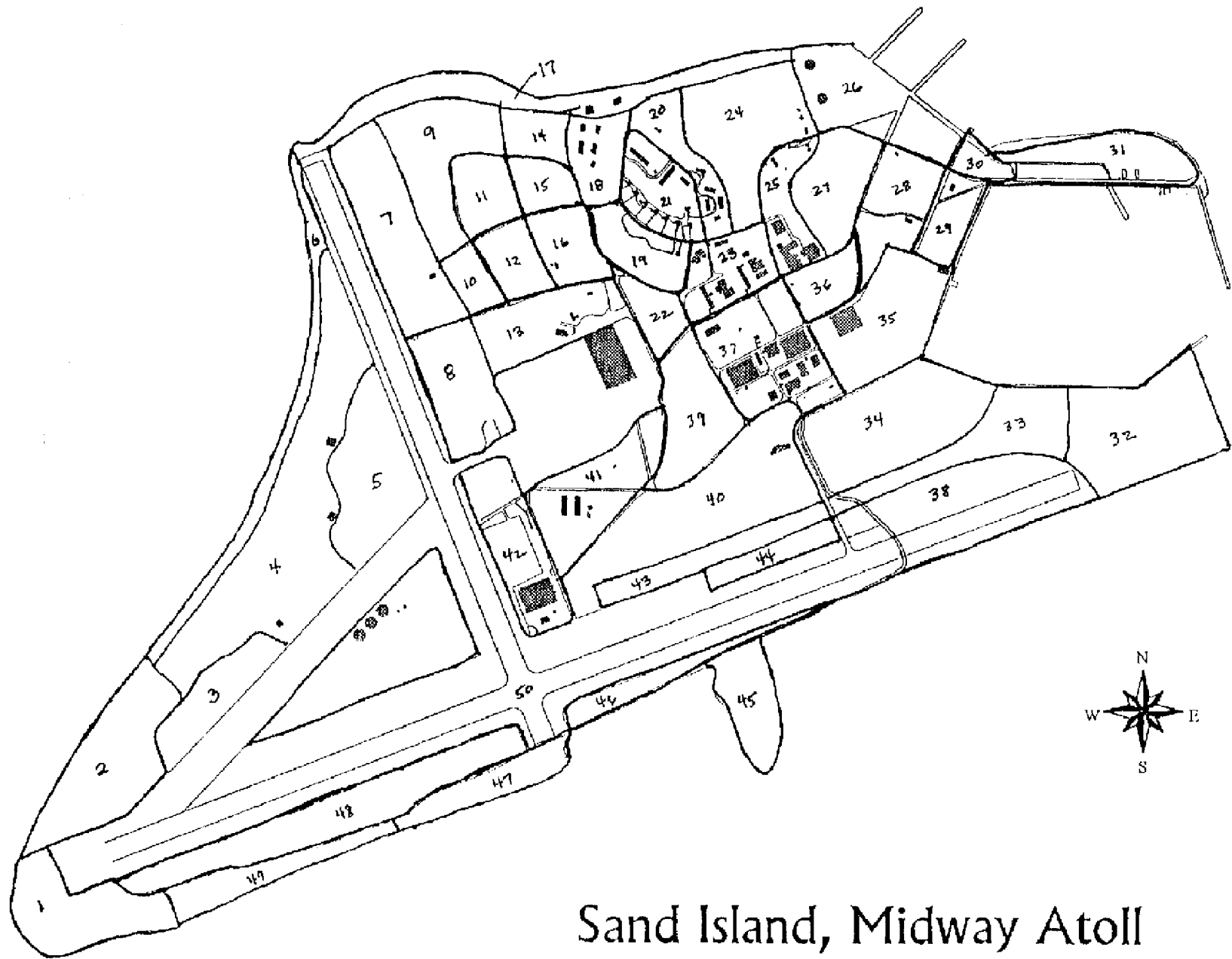
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		Status	Cult/Nat	Sand	Spit	Eastern
Coccoloba uvifera	Sea grape	Alien	Nat	O	R	R/O
Portulacaceae (Purslane family)						
Portulaca afra	Jade tree	Alien	Cult	R	-	-
Portulaca lutea	'Thi	Native	Nat	-	-	-
Portulaca oleracea	Common purslane	Alien	Nat	-	-	-
Portulaca lutea/oleracea/hybrid	Unknown 'ihi	?	Nat	O/C	R	O/C
Primulaceae (Primrose family)						
Anagalis arvensis	Scarlet pimpernel	Alien	Nat	C	-	R/O
Rosaceae (Rose family)						
Fragaria	Strawberry	Alien	Cult	R	-	-
Rosa sp.	Rose	Alien	Cult	R	-	-
Rubiaceae (Coffee family)						
Gardenia sp.	Gardenia	Alien	Cult	-	-	-
Rutaceae (Citrus family)						
Citrus limon	Lemon, meyer	Alien	Cult	R	-	-
Citrus paradisi	Grapefruit, star-ruby, white	Alien	Cult	R	-	-
Citrus sinensis	Orange, valencia, navel, blo	Alien	Cult	R	-	-
Citrus sp.	Unknown citrus	Alien	Cult	R	-	-
Murraya paniculata	Mock orange	Alien	Cult	-	-	-
Schrophulariaceae (Figwort family)						
Bacopa monnieri	'Ae'ae	Native	Nat	-	-	-
Russelia equisetiformis	Coral / firecracker plant	Alien	Cult	R	-	-
Solanaceae (Tomato family)						
Capsicum annuum	Red pepper	Alien	Cult	R	-	-
Capsicum annuum var. grossum	Bell pepper	Alien	Cult	R	-	-
Cestrum nocturnum	Night cestrum	Alien	Cult	R	-	-
Lycopersicon esculentum	Tomato	Alien	Cult	R	-	-
Lycopersicon pimpinellifolium	Cherry tomato	Alien	Cult/Nat	R	-	-
Solanum americanum	Popolo	Native ?	Nat	C	O	O
Solanum linnaeanum	Apple of Sodom	Alien	Cult	R	-	-
Solanum melongena	Eggplant	Alien	Cult	R	-	-
Solanum nelsonii	Popolo	Native	Nat	-	R	-
Unknown Solanaceae (Solanum?)	Purple flowered	Alien	Cult	R	-	-
Unknown Solanaceae (Solanum?)	White flowered	Alien	Cult	R	-	-
Sterculiaceae (Cocoa family)						
Waltheria indica	'Uhaloa	Native?	Nat	R	-	-
Tropaeolaceae (Nasturtium family)						
Tropaeolum majus	Nasturtium	Alien	Cult	R	-	-
Urticaceae (Nastrutium family)						
Pilea microphylla	Artillery plant	Alien	Nat	O	R	-

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		Status	Cult/Nat	Sand	Spit	Eastern
Unknown urticaceae ?	Large artillery plant	Alien	Cult	R	-	-
Verbenaceae (Vervain family)						
Lantana camara	Lantana	Alien	Nat	O	-	-
Phyla nodiflora		Alien	Nat	O	-	-
Stachytarpheta dichotoma	Oi	Alien	Nat	-	-	-
Stachytarpheta jamaicensis	Owi	Alien	Nat	R	-	-
Verbena littoralis	Ha'uowi, vervain	Alien	Nat	O	-	-
Vitex trifolia var. subtrisecta f. subtrisecta	Pohinahina	Alien	Cult	R	-	-
Vitex trifolia var. subtrisecta f. variegata	Pohinahina	Alien	Cult	R	-	-
Violaceae (Violet family)						
Viola odorata	Violet	Alien	Cult	-	-	-
Vitaceae (Grape family)						
Vitis sp. vinifera?	Grape	Alien	Cult	R	-	-
Zygophyllaceae (Tribulus family)						
Tribulus cistoides	Nohu	Native	Nat	R/O	O	O/C
Unknown others						
	Radicio ? (lettuce like)	Alien	Cult	R	-	-
	Kohlrabi	Alien	Cult	R	-	-



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Sectors Used for Botanical Survey 1999

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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
- = Not found																											
R = Rare																											
O = Occasional																											
C = Common																											
D = Dominant																											
Pteridophytes																											
Davalliaceae (Sword fern family)																											
Nephrolepis multiflora	Sword fern	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-	-
Dicksoniaceae (Tree fern family)																											
Cibotium sp.	Tree fern	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polypodiaceae (Common fern family)																											
Phymatosorus scolopendria	Laua'e	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Psilotaceae (Psilotum family)																											
Psilotum nudum	Moa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gymnospermae																											
Araucariaceae (Araucaria family)																											
Araucaria heterophylla	Norfolk island pine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	O	O	R/O	-	O	-	-	-
Cupressaceae (Cypress family)																											
Cupressus sp.	Cypress tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-
Cycadaceae (Cycad family)																											
Cycas circinalis	Sago palm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R	O	-	-	R/O	-	-	-
Cycas revoluta	Sago palm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monocotyledonae																											
Agavaceae (Agave family)																											
Agave attenuata		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-
Agave sisalana	Sisal	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-
Cordyline fruticosa	Ti leaf	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	O	-	-	-	-	-

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		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
- = Not found																										
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D = Dominant																										
Pteridophytes																										
Davalliaceae (Sword fern family)																										
Nephrolepis multiflora	Sword fern	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dicksoniaceae (Tree fern family)																										
Cibotium sp.	Tree fern	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polypodiaceae (Common fern family)																										
Phymatosorus scolopendria	Laua'e	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Psilotaceae (Psilotum family)																										
Psilotum nudum	Moa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gymnospermae																										
Araucariaceae (Araucaria family)																										
Araucaria heterophylla	Norfolk island pine	-	-	-	-	-	-	-	-	-	-	O	R	-	-	-	-	-	-	-	-	-	-	-	-	-
Cupressaceae (Cypress family)																										
Cupressus sp.	Cypress tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-
Cycadaceae (Cycad family)																										
Cycas circinalis	Sago palm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cycas revoluta	Sago palm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monocotyledonae																										
Agavaceae (Agave family)																										
Agave attenuata		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Agave sisalana	Sisal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cordyline fruticosa	Ti leaf	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Cordyline sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Draceana fragrans		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	O	-	-	-	
Draceana marginata	Money tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	
Sansevieria trifasciata	Mother in law toungue	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	O	R	O	O	-	R	-	-	
Unknown agave ?		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	
Aloeaceae (Aloe family)																											
Aloe vera	Aloe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	O	O	-	R	-	R
Araceae (Taro family)																											
Alocasia cucullata	Chinese taro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Alocasia macrorrhiza	'Ape	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R	-	R	-	-
Anthurium andraeanum	Anthurium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Caladium bicolor	Caladium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Colocasia esculenta	Taro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dieffenbachia sp.	Dumb cane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
Epipremnum pinnatum	Golden pothos	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	R	O	-	-	-	-	
Monstera deliciosa	Monstera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
Philodendron sp.	Philodendron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Syngonium polophyllum	Syngonium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	O	-	-	-	-
Syngonium with divided leaves		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-
Xanthosoma sp.	Ape	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arecaceae (Palm family)																											
Cocos nucifera	Coconut	R	-	-	-	-	-	-	-	-	R	-	R	-	R	-	-	-	O	O	O	O	-	O	R/O	O	
Phoenix sp.	Date palm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pritchardia sp.	Loulu palm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-
Roystonea sp.	Royal palm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vietchia merilii ?	Manilla palm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R/O	-	-
Bromeliaceae (Bromeliad family)																											
Ananas comosus	Pineapple	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-
Cannaceae (Canna family)																											
Canna indica	Canna	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	O	O	-	-	-	-	-

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		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Cordyline sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Draceana fragrans		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
Draceana marginata	Money tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
Sansevieria trifasciata	Mother in law toungue	-	-	-	-	-	R	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	R
Unknown agave ?		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aloeaceae (Aloe family)																										
Aloe vera	Aloe	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
Araceae (Taro family)																										
Alocasia cucullata	Chinese taro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alocasia macrorrhiza	'Ape	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anthurium andraeanum	Anthurium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caladium bicolor	Caladium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colocasia esculenta	Taro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dieffenbachia sp.	Dumb cane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
Epipremnum pinnatum	Golden pothos	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
Monstera deliciosa	Monstera	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Philodendron sp.	Philodendron	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syngonium polophyllum	Syngonium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
Syngonium with divided leaves		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xanthosoma sp.	Ape	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arecaceae (Palm family)																										
Cocos nucifera	Coconut	-	-	R	-	-	-	-	-	-	-	O	O	-	-	R	-	-	-	-	-	-	-	-	-	-
Phoenix sp.	Date palm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pritchardia sp.	Loulu palm	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Roystonea sp.	Royal palm	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vietchia merilii ?	Manilla palm	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromeliaceae (Bromeliad family)																										
Ananas comosus	Pineapple	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cannaceae (Canna family)																										
Canna indica	Canna	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Commelinaceae (Spiderwort family)																										
Commelina diffusa	Honohono	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichorisandra thyiflora	Blue ginger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tradescantia [Rhoeo] spathacea	Oyster plant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	O	O	-	-	-	-
Tradescantia sp.	Unknown day flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-
Tradescantia zebrina	Wandering jew	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	O	-	-	-	-
Cyperaceae (Sedge family)																										
Cyperus alterifolius ssp. flabelliformis	Umbrella plant	-	-	-	-	-	-	-	-	O	-	O	-	-	-	O	-	-	O	-	-	R	-	-	-	-
Cyperus papyrus	Papyrus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyperus rotundus	Purple nut sedge	O	O	-	O	O	-	O	O	-	R	R	-	O	R	R	R	-	O	O	O/C	O	O	O	-	O
Fimbristylis cymosa	Button sedge	O	-	O	O	O	-	-	R	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	R	-
Fimbristylis cymosa ssp. spathacea	Button sedge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fimbristylis cymosa ssp. umbellata cappit	Button sedge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mariscus javanicus	Ahu'awa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pycreus polystachyos ssp. polystachyos		-	-	-	-	O	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-
Liliaceae (Lily family)																										
Allium cepa	Onion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Allium fistulosum	Green onion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Allium porrum	Leek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
Allium sativum	Garlic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
Allium schoenoprasum	Chive	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
Asparagus setaceus	Asparagus fern	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	O	-	-	-
Chlorophytum comosum	Spider / bracket plant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	O	-	-	-
Crinum asiaticum	Crinum lily	-	-	-	-	-	-	-	-	R	O	-	-	-	R	-	R?	-	O	R	O	O	-	R	-	O
Hemerocallis sp.	Day lily	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hippeastrum sp.	Amaryllis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pancratium littorale	Spider lily	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
? ?	Unknown liliaceae	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R	-	-	-
Musaceae (Banana family)																										
Heliconia psittacorum	Heliconia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Musa x paradisiaca	Banana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	R	O	-	R	-	-
Strelitzia reginae	Bird of paradise	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-

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Commelinaceae (Spiderwort family)																										
Commelina diffusa	Honohono	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichorisandra thyiflora	Blue ginger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tradescantia [Rhoeo] spathacea	Oyster plant	-	-	-	-	-	R	-	-	-	-	-	R	-	-	-	-	R	-	-	-	-	-	-	-	R
Tradescantia sp.	Unknown day flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tradescantia zebrina	Wandering jew	-	-	-	-	-	R	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-
Cyperaceae (Sedge family)																										
Cyperus alterifolius ssp. flabelliformis	Umbrella plant	-	-	O	-	-	R	-	R	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	R
Cyperus papyrus	Papyrus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyperus rotundus	Purple nut sedge	R	O	O	R/O	O	R	O	O	O	O	O	O	O	O	O	O	-	O	O	R	O	O	O	-	R
Fimbristylis cymosa	Button sedge	-	-	-	-	-	-	O	O	O	-	-	-	C	-	O	O	O	-	C	-	O	-	C	-	C
Fimbristylis cymosa ssp. spathacea	Button sedge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fimbristylis cymosa ssp. umbellata cappit	Button sedge	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mariscus javanicus	Ahu'awa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pycreus polystachyos ssp. polystachyos		R	-	-	-	-	-	C	O/C	-	-	-	R	C	-	-	-	O	R	O	-	-	-	-	-	O
Liliaceae (Lily family)																										
Allium cepa	Onion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Allium fistulosum	Green onion	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
Allium porrum	Leek	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Allium sativum	Garlic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Allium schoenoprasum	Chive	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asparagus setaceus	Asparagus fern	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorophytum comosum	Spider / bracket plant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crinum asiaticum	Crinum lily	-	O	R	-	-	-	-	-	-	-	R	R	-	-	R	R?	-	-	-	-	-	-	-	-	-
Hemerocallis sp.	Day lily	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hippeastrum sp.	Amaryllis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pancratium littorale	Spider lily	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
? ?	Unknown liliaceae	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Musaceae (Banana family)																										
Heliconia psittacorum	Heliconia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Musa x paradisiaca	Banana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Strelitzia reginae	Bird of paradise	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Orchidaceae (Orchid family)																											
Vanda sp.	Vanda orchid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Various spp.	Unknown orchids	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Pandanaceae (Screwpine family)																											
Pandanus tectorius	Hala, screwpine	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	
Poaceae (Grass family)																											
Ammophila arenaria	European beachgrass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bothriochloa pertusa	Pitted beard grass	-	-	O	-	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Brachiaria mutica	California grass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	
Bromus willdenowii	Prairie grass	-	-	-	-	-	-	O	-	-	O	-	R	O	-	O	O	-	O	O	O/C	O	O	R/O	R	C	
Cenchrus agrimonioides var. laysanensis	Native bur grass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cenchrus ciliaris	Buffel grass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cenchrus echinatus	Sand bur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	R	-	
Chloris barbata	Swollen finger grass	-	-	-	-	-	-	-	-	-	R?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chloris divaricata	Star grass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chloris petraea		O	O	-	O	O	-	O	O	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	
Chloris virgata	Feather finger grass	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cymbopogon citratus	Lemon grass	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	O	-	R	-	R	
Cynodon dactylon	Bermuda grass	C	C	O/C	C	O	-	O	C	O	O	C/D	C/D	C/D	C/D	C	D	O	C	D	C/D	C	C/D	D	C/D	C/D	
Dactyloctenium aegyptium	Beach wire grass	O	-	O	O	O	O	O	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	R	O	-	
Digitaria ciliaris	Henry's crab grass	-	O	-	-	O	-	O	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	
Digitaria insularis	Sour grass	-	-	-	-	-	-	R/O	-	-	R	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	
Eleusine indica	Goose grass	O	O	O	O	O	O	O	C	O	O	O	O	O	C	C	-	C	C	C	C	C	C	C	O/C	C	
Eragrostis paupera	Native bunch grass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Eragrostis tenella	Love grass	-	O	O	O	O	-	O	C	O	-	C	C/D	O/C	R	R	C	-	O	-	O	-	-	O	O	-	
Eragrostis variabilis	Emaloa, Kawelu	-	O	-	O	-	O	-	-	-	-	O	R	O	-	-	O	O	O	O	O	O	-	-	O	-	
Hordeum leporinum	Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Leptochloa uninervia ?	Sprangletop	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Lepturus repens		O	O	-	-	-	O/C	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-	
Melinis [Rynchelytrum] repens	Natal red top	-	R	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Panicum maximum	Guinea grass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Paspalum setaceum		O	O	O	O	O	-	R	O	-	-	-	-	-	-	-	-	-	-	-	R	-	O	O	O	-	
Paspalum urvillei	Vasey grass	-	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Poa annua	Blue grass	O	-	-	-	-	-	-	-	-	O	-	-	O	O	O	-	-	O	O	O	O	-	O	-	O	-

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Orchidaceae (Orchid family)																										
Vanda sp.	Vanda orchid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Various spp.	Unknown orchids	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pandanaceae (Screwpine family)																										
Pandanus tectorius	Hala, screwpine	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poaceae (Grass family)																										
Ammophila arenaria	European beachgrass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bothriochloa pertusa	Pitted beard grass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	O	-	R
Brachiaria mutica	California grass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromus willdenowii	Prairie grass	-	O	O	-	-	-	-	-	-	-	O	O	-	O	O	O	-	-	-	-	-	-	-	-	-
Cenchrus agrimonioides var. laysanensis	Native bur grass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cenchrus ciliaris	Buffel grass	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cenchrus echinatus	Sand bur	-	-	-	-	-	-	-	-	-	-	-	O	-	R/O	R	-	-	-	-	-	-	-	O	-	-
Chloris barbata	Swollen finger grass	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-
Chloris divaricata	Star grass	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloris petraea		-	O	-	R	-	R	C	O	O	-	O	-	O	-	O	-	O	R	O	O	O	-	D	-	O
Chloris virgata	Feather finger grass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cymbopogon citratus	Lemon grass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cynodon dactylon	Bermuda grass	C/D	C/D	C	D	D	C/D	O/C	O/C	D	-	C	C/D	C	D	D	D	D	O	O	D	O	C/D	D	C	O
Dactyloctenium aegyptium	Beach wire grass	O	O	O	-	O	R/O	O	O	O	O	-	R	O	-	-	-	O	-	R	O	O	O	O	O	C
Digitaria ciliaris	Henry's crab grass	O	-	O	R	-	-	O	-	-	O	-	O	R	R	-	-	-	O	-	C	-	O	-	O	
Digitaria insularis	Sour grass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Eleusine indica	Goose grass	C	-	C	O	O	C	O	O	O	O	O	C	O	O	O	O	O	R	-	O	O	O	O	O	O
Eragrostis paupera	Native bunch grass	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-
Eragrostis tenella	Love grass	O	O	O	R/O	R/O	O	O	O	O	O	O	O	O	O	O	O	O	R	O	O	-	-	O	O	C
Eragrostis variabilis	Emaloa, Kawelu	-	O	-	-	R	R	O	-	-	-	O	R	-	-	-	-	-	-	-	O	-	O	-	-	-
Hordeum leporinum	Barley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Leptochloa uninervis ?	Sprangletop	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lepturus repens		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melinis [Rynchelytrum] repens	Natal red top	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Panicum maximum	Guinea grass	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paspalum setaceum		O	O	O	O	-	-	O	O	O	O	O	O	O	O	O	O	O/C	-	C	O	C	O	C	-	O
Paspalum urvillei	Vasey grass	-	-	-	-	-	-	-	-	R/O	-	-	-	-	R	-	-	O	-	-	-	-	-	-	-	R
Poa annua	Blue grass	R/O	-	O	R	-	-	-	O	-	O	O	O	O	-	-	O	-	-	-	-	-	-	-	-	O

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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Polypogon interruptus	Ditch polypogon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Polypogon monspeliensis	Rabbitfoot grass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Setaria verticillata	Bristly foxtail	-	O	O	R	-	-	-	-	-	C	O	-	O	O	O	-	-	O	O	O	O	O	O	O	-	O
Sporobolus sp. africanus ?	African dropseed	O	-	O	O	O	-	O	O	-	-	-	O	O	-	-	-	-	-	O	-	-	-	O	R/O	O	
Sporobolus indicus	Indian dropseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sporobolus pyramidatus		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sporobolus virginicus	Aki'aki, Beach dropseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Stenotaphrum secundatum	St. Augustine/buffalo grass	-	O	O	O	-	-	-	-	O	-	-	-	O/C	C/D	C	O	-	C	C	C	O/C	C	O	R	O	
Vulpia myuros	Foxtail fescue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Zea mays	Corn	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	
Unknown grass	Holcus like	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Unknown grass	Andropogon virg. like	-	-	-	R	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Unknown grass	By seaplane ramp field	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Zingiberaceae (Ginger family)																											
Alpinia zerumbet	Shell ginger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Hedychium gardnerianum	Kahili ginger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Unknown zingiber	Galang ?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dicotyledonae																											
Acanthaceae (Acanthus family)																											
Asystasia gangetica	Chinese violet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Odontonema strictum	Odontonema	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ruellia brittoniana	Ruellia	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	R	-	R	-	-	-	-	-	
Aizoaceae (Carpetweed family)																											
Sesuvium portulacastrum	'Akulikuli	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R/O	-	
Tertragonia tetragonioides	New Zealand spinach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Amaranthaceae (Amaranth family)																											
Achyranthes atollensis		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Alternanthera tenella	Joyweed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Amaranthus dubius	Pakai	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Amaranthus hybridus	Green amaranth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Amaranthus lividus ssp. polygonoides	Slender amaranth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Amaranthus spinosus	Spiny pigweed	-	-	-	-	-	-	-	-	-	O	O	-	-	-	-	-	-	R	-	-	-	-	-	-	-	

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		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Polypogon interruptus	Ditch polypogon	R	-	-	-	-	-	-	O	-	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-
Polypogon monspeliensis	Rabbitfoot grass	-	-	-	-	-	-	O	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Setaria verticillata	Bristly foxtail	-	-	-	R	-	-	-	R	-	-	-	R	-	-	O	O	-	-	-	-	-	-	-	-	-
Sporobolus sp. africanus ?	African dropseed	O	O	O	O	O	-	O	-	R/O	O	O	-	O	O	O	C	O	-	O	-	O/C	O	C	-	O
Sporobolus indicus	Indian dropseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sporobolus pyramidatus		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sporobolus virginicus	Aki'aki, Beach dropseed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stenotaphrum secundatum	St. Augustine/buffalo grass	-	O	O	O	O	-	O	O	O	-	O	O	R	C	O	O	-	O	-	-	-	-	-	O	-
Vulpia myuros	Foxtail fescue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zea mays	Corn	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown grass	Holcus like	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-
Unknown grass	Andropogon virg. like	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown grass	By seaplane ramp field	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zingiberaceae (Ginger family)																										
Alpinia zerumbet	Shell ginger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hedychium gardnerianum	Kahili ginger	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown zingiber	Galang ?	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
Dicotyledonae																										
Acanthaceae (Acanthus family)																										
Asystasia gangetica	Chinese violet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Odontonema strictum	Odontonema	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ruellia brittoniana	Ruellia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aizoaceae (Carpetweed family)																										
Sesuvium portulacastrum	'Akulikuli	-	-	-	-	-	-	-	R/O	-	-	-	R	-	-	-	-	-	-	-	R	-	-	-	-	-
Tertragonia tetragonioides	New Zealand spinach	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-
Amaranthaceae (Amaranth family)																										
Achyranthes atollensis		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alternanthera tenella	Joyweed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amaranthus dubius	Pakai	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amaranthus hybridus	Green amaranth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amaranthus lividus ssp. polygonoides	Slender amaranth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amaranthus spinosus	Spiny pigweed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Amaranthus viridus	Slender amaranth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Amaranthus sp.	Unknown amaranth	O	-	-	-	O	-	-	O	-	O	O	O/C	O	O	O	O	-	C	O	O	O	O	O/C	R	O/C	
Gomphrena globosa	Globe amaranth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	
Anacardiaceae (Mango family)																											
Mangifera indica	Mango	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Schinus terebinthifolius	Christmas berry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	
Apiaceae (Carrot family)																											
Anethum graveolens	Dill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	
Ciclospermum leptophyllum	Fine leaved celery	-	-	-	O	O	-	O	O	-	O	O	-	O	-	O	R	-	O	O	O	O	O	O	O	-	O
Daucus carota	Carrot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	
Petroselinum crispum	Parsley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	O	-	-	-	
??	Cilantro	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	
Apocynaceae (Periwinkle family)																											
Allamanda cathartica	Allamanda	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Carissa macrocarpa	Natal plum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Cascabella thevetia	Be still tree	-	-	-	-	-	-	-	-	-	R	-	-	O	-	-	-	-	-	R	R	R	-	-	-	-	
Catharanthus roseus	Rosy periwinkle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ervatamia sp.	Crape jasmine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Nerium oleander	Oleander	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	R	O	O	-	O	-	O	
Plumeria obtusa	Singapore plumeria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	R	-	-	
Plumeria rubra	Red plumeria, frangipani	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	R	O	-	-	R	-	-	
Plumeria sp.	Plumeria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Araliaceae (Ginseng family)																											
Polyscias guilfoylei	Panax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	R	-	
Schefflera actinophylla	Octopus tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	R	-	-	-	-	R	
Asteraceae (Daisy family)																											
Arctium lappa	Gobo, burdock	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bidens alba var. radiata	Spanish needles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bidens pilosa	Spanish needles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Bidens sp.	alba or pilosa	O	O	O/C	O	C	O	O	O	O	-	O	O	O	-	R	O	O	O	O	-	-	O	R	O	O	
Calyptocarpus vialis		-	-	-	-	-	-	-	-	-	R	-	-	O	-	O	-	-	-	-	-	O	O	-	O	-	

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Amaranthus viridus	Slender amaranth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amaranthus sp.	Unknown amaranth	R	O	O	R/O	-	-	O	O	R/O	O	O	-	-	O	O	O	O	-	-	-	-	O	O	O	R
Gomphrena globosa	Globe amaranth	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Anacardiaceae (Mango family)																										
Mangifera indica	Mango	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schinus terebinthifolius	Christmas berry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-
Apiaceae (Carrot family)																										
Anethum graveolens	Dill	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ciclospermum leptophyllum	Fine leaved celery	O	O/C	O/C	C	O	R	O/C	O	O	O	O	O	R	R	-	O	O	-	-	-	-	-	-	-	O
Daucus carota	Carrot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Petroselinum crispum	Parsley	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
??	Cilantro	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
Apocynaceae (Periwinkle family)																										
Allamanda cathartica	Allamanda	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carissa macrocarpa	Natal plum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cascabella thevetia	Be still tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Catharanthus roseus	Rosy periwinkle	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ervatamia sp.	Crape jasmine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nerium oleander	Oleander	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plumeria obtusa	Singapore plumeria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plumeria rubra	Red plumeria, frangipani	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plumeria sp.	Plumeria	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Araliaceae (Ginseng family)																										
Polyscias guilfoylei	Panax	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schefflera actinophylla	Octopus tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asteraceae (Daisy family)																										
Arctium lappa	Gobo, burdock	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bidens alba var. radiata	Spanish needles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bidens pilosa	Spanish needles	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bidens sp.	alba or pilosa	O/C	O	O/C	C	R	O	C	O	O	O	O	O	C	O	C	O	O/C	O	O	O	O	O	O	D	O
Calypocarpus vialis		-	-	O	R	-	-	-	-	-	O	O	O	-	O	-	-	R	-	-	-	-	-	-	-	-

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Chrysanthemum ?	Chrysanthemum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conyza bonariensis	Hairy horseweed	O	O	O	O	O	-	O	O	-	O	O	O	R	O	-	O	-	O	O	O	O	-	R	O/C	O
Conyza canadensis	Horseweed	O	O	O	O	O	O/C	O	O	O	O	C	O/C	O	O	O	C	C	O	-	O	O	-	O	O	O
Coreopsis ?	Calliopsis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cosmos ?	Cosmos	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gamochaeta purpurea		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Helianthus annuus	Sunflower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lactuca sativa	Lettuce	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	O	O	-	-	-	-
Pluchea x fosbergii	Hybrid pluchea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pluchea indica	Indian pluchea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pluchea symphytifolia [odorata]	Sour bush	-	O	-	R/O	O	R	R	R	-	-	O	R	-	-	-	-	-	-	-	-	-	-	R	-	-
Pseudognaphalium sandwicense var. sandw.	Ena'ena	-	-	O	O	O	-	R	O	-	R	O	O	-	-	-	O	O	-	-	R/O	R	-	O	C/D	O
Sonchus oleraceus	Sow thistle	O	O	-	O	-	O	O	O	-	O	O	O	O	O	O	O	O	O	O	O	R	-	O	O	O
Tagetes sp.	Marigold	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tridax procumbens	Coat buttons	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Verbesina encelioides	Golden crown beard	C/D	C/D	C/D	D	C	C	C	C	C/D	O	C	O	C	O	O	O	C	O	C	O	O	O	O	O	O
Wedelia trilobata	Wedelia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xanthium stumarium var. candense	Cocklebur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown aster		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinnia sp.	Large zinnia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-
Zinnia peruviana ?	Zinnia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
??	Artichoke	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-
Balsaminaceae (Impatiens family)																										
Unknown impatiens?	Balsan, candlestick plant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-
Basellaceae (Basella family)																										
Basella alba	Ceylon spinach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	R	-
Bignonaceae (Bignonia family)																										
Spathodea campanulata	African tulip tree	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tabebuia sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	R?
Boraginaceae (Heliotrope family)																										
Cordia sebestena	Kou haole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
Heliotropium procumbens var. depressum		-	-	-	O	O	-	R	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	O	-

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		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Chrysanthemum ?	Chrysanthemum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Conyza bonariensis	Hairy horseweed	O	O	O	O	O	O	O	O	O	O	O	O	O	-	O	O	O	C	O	O	O	O	O	O	O
Conyza canadensis	Horseweed	O	C	O	-	O	R/O	O	O	O	O	O	O	O	O	O	O	O	C	O	O	O	-	O	O	O
Coreopsis ?	Calliopsis	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cosmos ?	Cosmos	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gamochaeta purpurea		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Helianthus annuus	Sunflower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lactuca sativa	Lettuce	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	R	-	-	-	-	-	-	-	-
Pluchea x fosbergii	Hybrid pluchea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pluchea indica	Indian pluchea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pluchea symphytifolia [odorata]	Sour bush	R	-	O	R/O	-	R	C	O	-	-	-	-	O	-	-	-	R	-	-	-	-	-	-	-	O
Psuedognaphalium sandwicensium var. sa	Ena'ena	O/C	O	O	R	R/O	R	C	O	O	O	O	R	O	-	-	-	O	R	-	O	O	-	-	-	O
Sonchus oleraceus	Sow thistle	O	C	C	O	R/O	O	O	O	O	O	O	O	O	O	O	O	-	-	-	O	O	O	O	O	O
Tagetes sp.	Marigold	-	-	-	-	-	-	-	-	-	R	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
Tridax procumbens	Coat buttons	-	-	-	-	-	-	-	-	-	-	-	-	R/O	-	R	-	-	-	R	-	-	-	O	O	O
Verbesina encelioides	Golden crown beard	O	C	C	C	O	O	C	C	O	O	O	O	O	O	C	C	O	O	-	O	O/C	D	C	D	O
Wedelia trilobata	Wedelia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Xanthium stumarium var. candense	Cocklebur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown aster		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinnia sp.	Large zinnia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinnia peruviana ?	Zinnia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
??	Artichoke	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Balsaminaceae (Impatiens family)																										
Unknown impatiens?	Balsan, candlestick plant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Basellaceae (Basella family)																										
Basella alba	Ceylon spinach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bignonaceae (Bignonia family)																										
Spathodea campanulata	African tulip tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tabebuia sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Boraginaceae (Heliotrope family)																										
Cordia sebestena	Kou haole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heliotropium procumbens var. depressum		O/C	O	O	R/O	-	R/O	O	O	R	O	O	O	O	O	O	O	R	-	-	R	O	-	-	-	O

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
<i>Tournefortia argentea</i>	Tree heliotrope	O	-	-	-	-	O	-	-	R	-	O	R	-	R	-	O	O	-	O	O	O	-	R	R/O	-
Brassicaceae (Mustard family)																										
<i>Brassica nigra</i>	Black mustard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	R	-	-	-	R
<i>Brassica</i> sp.	Purple leaved cabbage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Brassica</i> sp.	Green leaved cabbage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-
<i>Brassica</i> sp.	Broccoli	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	R	-	-
<i>Brassica</i> sp.	Cauliflower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	R	-	-	-	-	-
<i>Capsella rubella</i>	Shepard's purse	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	O	-	R	-	R
<i>Coronopus didymus</i>	Swine cress	-	O	O	O	O	-	O	-	O	O	O/C	-	O	O	O	O	-	C	O	O	O	-	O	O	C
<i>Lepidium bidentatum</i> var. <i>o wiahiense</i>	Anaunau	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Lepidium virginicum</i>	Pepper grass	O	O	O	O	O	-	O	C	O	O	O	C	O	O	C	C	-	C	C	C	C	C	C	C	O/C
<i>Lobularia maritima</i>	Sweet alyssum	C/D	C/D	O	C/D	O	O	O	C	C	O	O	C	C/D	C	O	O	O	C	C	O/C	C	C	O/C	C	O
<i>Raphanus sativus</i>	Radish	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
??	Unknown purple brass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-
??	Pak? Choy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	O	-	-
Cactaceae (Cactus family)																										
<i>Epiphyllum oxypetalum</i>	Gooseneck cactus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-
<i>Hylocereus undatus</i>	Night blooming cereus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Opuntia cochenillifera</i>	Cochineal cactus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	O	-	-	-	-
??	Pencil like cactus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
Capparaceae (Caper family)																										
<i>Capparis sandwichiana</i>	Maia pilo, pua pilo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caricaceae (Papaya family)																										
<i>Carica papaya</i>	Papaya	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	O	-	O	-	R	-	R
Caryophyllaceae (Pink family)																										
<i>Cerastium fontanum</i> var. <i>triviale</i>	Common mouse ear	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Dianthus caryophyllus</i>	Carnation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-
<i>Sagina decumbens</i> ?	Pearlwort	-	-	-	O	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Spergularia marina</i>	Saltmarsh sand spurry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	O	-
<i>Stellaria media</i>	Chickweed	O	-	O	O	O	-	-	-	-	R	O	R	O	O	R	O	-	O	O	-	O	O	O	R/O	O

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
<i>Tournefortia argentea</i>	Tree heliotrope	R	-	-	-	-	R	-	-	-	-	-	R	-	-	-	-	-	-	-	O	-	C	-	C	-
Brassicaceae (Mustard family)																										
<i>Brassica nigra</i>	Black mustard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Brassica</i> sp.	Purple leaved cabbage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Brassica</i> sp.	Green leaved cabbage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Brassica</i> sp.	Broccoli	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Brassica</i> sp.	Cauliflower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Capsella rubella</i>	Shepard's purse	R	-	O	-	-	-	R	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-
<i>Coronopus didymus</i>	Swine cress	R	O	-	-	R	O	O	-	-	O	O	O/C	-	O	O	O	O	-	-	O	-	-	-	O	-
<i>Lepidium bidentatum</i> var. <i>o wiahiense</i>	Anaunau	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Lepidium virginicum</i>	Pepper grass	O/C	C	C	C	C	C	O	O	C	O	C	C	O	C	C	C	O	R	-	-	O	O	O	O	O
<i>Lobularia maritima</i>	Sweet alyssum	O	C	O	R	O	C	O/C	O	D	O	C	O	O/C	D	D	C	C/D	O	O	O	C	O/C	D	C	O
<i>Raphanus sativus</i>	Radish	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
??	Unknown purple brass	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
??	Pak? Choy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cactaceae (Cactus family)																										
<i>Epiphyllum oxypetalum</i>	Gooseneck cactus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Hylocereus undatus</i>	Night blooming cereus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Opuntia cochenillifera</i>	Cochineal cactus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
??	Pencil like cactus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capparaceae (Caper family)																										
<i>Capparis sandwichiana</i>	Maia pilo, pua pilo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caricaceae (Papaya family)																										
<i>Carica papaya</i>	Papaya	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	R	-	-	-	-	-	-	-	-	-
Caryophyllaceae (Pink family)																										
<i>Cerastium fontanum</i> var. <i>triviale</i>	Common mouse ear	-	-	-	-	-	R	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Dianthus caryophyllus</i>	Carnation	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Sagina decumbens</i> ?	Pearlwort	-	-	-	-	-	-	O	O	-	-	-	-	O	R	-	R	-	-	-	-	-	-	O	-	O
<i>Spergularia marina</i>	Saltmarsh sand spurry	O	-	-	-	-	R	O/C	O	O	O	-	R	C	-	-	-	-	-	-	R	-	-	-	-	O?
<i>Stellaria media</i>	Chickweed	R	O	C	O	R	O	O	O	O	O	O	O/C	O	O	O	O	-	-	-	-	-	-	-	O	-

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Casuarinaceae (Casuarina family)																										
Casuarina equisetifolia	Ironwood	O	C/D	C/D	D	D	C	D	D	C/D	D	C	O	C/D	C	C/D	O	C	C	C	O/C	C	C	C/D	C	C
Casuarina glauca	Longleaf ironwood	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chenopodiaceae (Goosefoot family)																										
Chenopodium murale	Goosefoot	-	-	-	-	-	-	-	-	-	-	-	-	O	R	-	-	-	O	O	O	O	O	R	R	O
Spinacia oleracea	Spinach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	R	-	-	-	-
Clusiaceae (Mangosteen family)																										
Calophyllum inophyllum	Kamani	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clusea rosea	Autograph tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Combretaceae (Indian almond family)																										
Conocarpus erectus	Buttonwood	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
Terminalia catappa	False kamani	-	-	O	O	-	-	R	-	O	-	-	-	O	-	R	-	-	O	R	R	R	-	O	-	-
Convolvulaceae (Morning glory family)																										
Ipomoea aquatica	Swamp cabbage	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	R	-	R
Ipomoea batatas	Sweet potato	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	O	-	R	-	-
Ipomoea indica	Koali awa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ipomoea pes-caprae ssp. brasiliensis	Beach morning glory	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	R	-	O	-
Ipomoea sp. pupurea?	Garden morning glory	-	R	-	-	-	-	-	-	-	-	R	R	-	-	R	R	-	-	R	-	-	-	-	-	-
Ipomoea triloba	Little bell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Merrimia tuberosa	Wood rose	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crassulaceae (Stonecrop family)																										
Crassula sp.	Stonecrop	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O?	-	-	-	-
Kalanchoe daigremontiana x tubiflora		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kalanchoe pinnata	Air plant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	R	O	-	-	-	-
Kalanchoe tubiflora	Chandelier plant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
Unknown crassulaceae ?		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-
Cucurbitaceae (Gourd family)																										
Coccinia grandis	Ivy gourd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
Citrullus vulgaris	Watermelon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-
Cucumis melo var. cantalupensis	Cantaloupe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-

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		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Casuarinaceae (Casuarina family)																										
Casuarina equisetifolia	Ironwood	C	D	C/D	C/D	D	D	D	D	O	-	D	O/C	O	-	O	C	O	D	O	R	O	C	R/O	C	R
Casuarina glauca	Longleaf ironwood	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-	-
Chenopodiaceae (Goosefoot family)																										
Chenopodium murale	Goosefoot	R	O	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	O	-
Spinacia oleracea	Spinach	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clusiaceae (Mangosteen family)																										
Calophyllum inophyllum	Kamani	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-
Clusea rosea	Autograph tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Combretaceae (Indian almond family)																										
Conocarpus erectus	Buttonwood	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminalia catappa	False kamani	-	R	-	-	-	-	-	-	-	-	-	R	-	-	-	R	-	-	-	-	-	-	-	-	-
Convolvulaceae (Morning glory family)																										
Ipomoea aquatica	Swamp cabbage	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	R	-	-	-	-	-	-	-	-
Ipomoea batatas	Sweet potato	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ipomoea indica	Koali awa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ipomoea pes-caprae ssp. brasiliensis	Beach morning glory	-	-	-	-	-	O	R	-	R	-	-	R	R	-	-	R	O	-	-	D	O	O	-	-	R
Ipomoea sp. pupurea?	Garden morning glory	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ipomoea triloba	Little bell	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Merrimia tuberosa	Wood rose	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crassulaceae (Stonecrop family)																										
Crassula sp.	Stonecrop	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kalanchoe daigremontiana x tubiflora		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kalanchoe pinnata	Air plant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kalanchoe tubiflora	Chandelier plant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown crassulaceae ?		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
Cucurbitaceae (Gourd family)																										
Coccinia grandis	Ivy gourd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Citrullus vulgaris	Watermelon	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
Cucumis melo var. cantalupensis	Cantaloupe	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Cucumis sativus	Cucumber	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	R	-	-	-	-
Cucurbita pepo	Squash, zucchini	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	R	O	-	R	-	-
Momordica charantia	Bitter melon, Balsam pear	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	O	R	-	-	O	-	R
? ?	Unknown gourd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
? ?	Canary melon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-
Euphorbiaceae (Spurge family)																										
Acalypha wilksiana	Beefsteak plant	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	R	R	-	-	-
Breynia disticha var. rosi-picta	Snow bush	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chamaesyce hirta	Hairy spurge	O	O	O	O	O	-	O	O	-	O	-	O	O	-	-	O	-	-	O	R	O	-	-	O	O
Chamaesyce hypericifolia	Graceful spurge	-	R	-	O	O	-	-	R	-	O	O	O	-	-	-	O	-	-	O	O	O	-	R	-	-
Chamaesyce hyssopifolia		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chamaesyce maculata		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chamaesyce prostata	Small ground fig	O	O	O	O	-	-	-	-	R	O	-	-	R	-	-	-	-	O	O	O	-	-	R	-	O
Chamaesyce sp. ?	Middle cham. ?	O	-	O	O	O	O	O	-	-	-	-	-	O	R	-	-	-	-	-	-	-	O	-	-	-
Codiaeum variegatum var. pictum	Croton	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	O	O	-	O	-	R
Euphorbia cyathopora	Wild poinsettia	-	O	O/C	O	O/C	-	O	O	O	O	O	R	O	R	-	R	-	O	-	-	-	-	-	-	-
Euphorbia heterophylla		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Euphorbia peplus	Petty spurge	-	-	-	O	-	-	-	O	O	O	O	O	O	R	O	O	-	O	O	O	O	O	O	R	O
Euphorbia pulcherrima	Poinsettia	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	O	O	-	-	-	-
Pedilanthus tithymaloides	Slipper flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-
Ricinus communis	Castor bean	-	-	R	R	-	-	-	-	-	R	R	-	R	-	-	R	-	-	R	R	-	-	-	-	-
Unknown euphorb 1 (Pedilanthus)	Big cactus like	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-
Unknown euphorb 2 (Pedilanthus)	Like 1, but different	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-
Fabaceae (Pea family)																										
Acacia farnesiana	Klu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Albizia lebbbeck	Siris tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
Cassia sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crotolaria incana	Fuzzy rattle pod	-	-	-	-	-	-	-	-	-	O	R	-	-	-	-	R	-	R	-	-	-	-	-	-	-
Crotolaria pallida	Rattle pod	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Delonix regia	Royal poinciana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	O	R	-	-	-	-
Desmanthus virgatus [pernambucanus]	Virgate / slender mimosa	-	-	-	-	-	-	-	-	-	O	R	-	O	-	-	O	-	O	-	-	-	-	-	-	-
Desmodium sandwicense	Spanish clover	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Erythrina variegata var. orientalis	Tiger's claw	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
Glycine soya	Soy bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Cucumis sativus	Cucumber	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cucurbita pepo	Squash, zucchini	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Momordica charantia	Bitter melon, Balsam pear	-	-	-	-	-	R	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
? ?	Unknown gourd	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
? ?	Canary melon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Euphorbiaceae (Spurge family)																										
Acalypha wilksiana	Beefsteak plant	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
Breynia disticha var. rosi-picta	Snow bush	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chamaesyce hirta	Hairy spurge	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	R	O	-	-	-	O	O	O
Chamaesyce hypericifolia	Graceful spurge	-	O	-	O	-	-	O	O	-	O	-	R	-	-	R	-	-	-	-	-	-	-	-	-	O
Chamaesyce hyssopifolia		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chamaesyce maculata		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chamaesyce prostata	Small ground fig	-	O	-	-	O	R/O	-	-	O	O	O	O	O	O	O	O	O	-	-	-	O	-	O	-	O
Chamaesyce sp. ?	Middle cham. ?	O	-	R/O	-	-	-	O	O	O	R	-	-	O	-	O	O	-	R	-	-	-	O	-	-	O
Codiaeum variegatum var. pictum	Croton	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
Euphorbia cyathopora	Wild poinsettia	-	C	C	O	-	O/C	O	O	-	-	-	-	-	-	O	O	-	-	-	-	-	-	-	-	-
Euphorbia heterophylla		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Euphorbia peplus	Petty spurge	O	O	O	O	O/C	C	O	O	O	R	O	O	-	O	O	O	-	-	-	-	-	-	-	-	R
Euphorbia pulcherrima	Poinsettia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedilanthus tithymaloides	Slipper flower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ricinus communis	Castor bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown euphorb 1 (Pedilanthus)	Big cactus like	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown euphorb 2 (Pedilanthus)	Like 1, but different	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fabaceae (Pea family)																										
Acacia farnesiana	Klu	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Albizia lebbbeck	Siris tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cassia sp.		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crotolaria incana	Fuzzy rattle pod	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Crotolaria pallida	Rattle pod	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Delonix regia	Royal poinciana	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Desmanthus virgatus [pernambucanus]	Virgate / slender mimosa	R	O	O	-	-	-	R	-	-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-	-
Desmodium sandwicense	Spanish clover	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Erythrina variegata var. orientalis	Tiger's claw	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-
Glycine soya	Soy bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Leucaena leucocephala	Koa haole	-	-	-	R	-	-	R	R	O	O	R	R	O	R	-	O	-	O	-	O	O	-	-	-	-
Medicago lupulina	Black medic	O	O	O	O	O	-	O	O	-	O	O	O	O	-	O	O	-	O	O	-	O	O	O	C	O
Medicago polymorpha	Bur clover	-	-	-	-	-	-	-	-	-	R	-	-	-	-	O	-	-	-	-	O	O	-	-	R	-
Medicago sativa	Alfalfa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melilotus alba	White sweet clover	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Melilotus indica	Yellow sweet clover	R	-	-	-	-	-	-	-	-	-	-	O	O	-	-	O	-	R	-	R	-	-	-	-	-
Phaseolus vulgaris	Common / bush bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-
Pithecellobium dulce	Opiuma, Manila tamarind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-
Prosopis pallida	Kiawe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Samanea saman	Monkey pod	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Senna surattensis	Kolomona	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sesbania grandiflora	Sesban, drumstick tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	R	O	-	R	-	-
Tamarindus indica ?	Tamarind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
??	Unknown bean ?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
??	Unknown pea ?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	O	-	-	-	-
Unknown fabaceae	Vigna or Canavalia ?	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gentianaceae (Gentian family)																										
Centaurium erythraea ssp. erythraea	Bitter herb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Geraniaceae (Geranium family)																										
Pelargonium hortorum	Fish geranium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	O	-	-	-	-
Goodeniaceae (Goodenia family)																										
Scaevola sericea	Naupaka kahakai	D	C/D	C	C/D	O	C	-	R	O	-	O	R	O	O	-	O	C/D	O	O	O	O	-	-	O	-
Lamiaceae (Mint family)																										
Majorana hortensis	Sweet marjoram	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-
Mentha sp.	Mint	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	R
Ocimum basilicum	Basil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	O	-	-	-	-
Phyllostegia variabilis		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plectranthus scutellarioides	Coleus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stachys arvensis	Staggerweed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lauraceae (Laurel family)																										
Persea americana	Avocado	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-

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March - June 1999
Forest Starr and Kim Martz

		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
<i>Leucaena leucocephala</i>	Koa haole	-	O	C	O	-	-	-	O	-	R	-	R	-	-	O	R	-	-	-	-	-	-	-	-	-
<i>Medicago lupulina</i>	Black medic	C	C	C	C	R	-	O	O	O	O	O	O/C	C	O	O	O	C	-	O	O	O/C	O	D	O	O
<i>Medicago polymorpha</i>	Bur clover	O	-	-	O/C	R/O	-	-	-	-	-	-	O	-	-	O	O	O	-	-	-	-	-	-	-	-
<i>Medicago sativa</i>	Alfalfa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Melilotus alba</i>	White sweet clover	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Melilotus indica</i>	Yellow sweet clover	O/C	O	R	R/O	-	-	O	O	R/O	O	-	-	C	O	-	-	O	-	-	-	O	-	O	O	-
<i>Phaseolus vulgaris</i>	Common / bush bean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Pithecellobium dulce</i>	Opiuma, Manila tamarind	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Prosopis pallida</i>	Kiawe	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Samanea saman</i>	Monkey pod	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Senna surattensis</i>	Kolomona	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Sesbania grandiflora</i>	Sesban, drumstick tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Tamarindus indica</i> ?	Tamarind	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
??	Unknown bean ?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
??	Unknown pea ?	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-
Unknown fabaceae	Vigna or Canavalia ?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gentianaceae (Gentian family)																										
<i>Centaurium erythraea</i> ssp. <i>erythraea</i>	Bitter herb	R	-	-	R/O	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-
Geraniaceae (Geranium family)																										
<i>Pelargonium hortorum</i>	Fish geranium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
Goodeniaceae (Goodenia family)																										
<i>Scaevola sericea</i>	Naupaka kahakai	R	O	-	-	-	O	O	-	-	-	O	O	-	-	-	-	-	-	-	O	O	D	-	D	R
Lamiaceae (Mint family)																										
<i>Majorana hortensis</i>	Sweet marjoram	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Mentha</i> sp.	Mint	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	R	-	-	-	-	-	-	-	-
<i>Ocimum basilicum</i>	Basil	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Phyllostegia variabilis</i>		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Plectranthus scutellarioides</i>	Coleus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Stachys arvensis</i>	Staggerweed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lauraceae (Laurel family)																										
<i>Persea americana</i>	Avocado	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Malvaceae (Mallow family)																										
Abutilon grandifolium	Hairy abutilon	-	-	-	-	-	-	-	-	-	O	R	-	O	-	-	-	-	-	-	-	-	-	-	-	-
Hibiscus esculentus	Okra	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hibiscus rosa-sinensis	Red hibiscus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	O	-	R	-	O
Hibiscus tiliaceus	Hau	-	-	O	O	-	-	-	-	O	-	-	-	R	R	-	-	-	R	-	-	-	-	-	-	-
Hibiscus sp.	Unknown hibiscus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malva parviflora	Cheese weed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	R	O	-	-	-	-	-
Malvastrum coromandelianum spp. coron	False mallow	-	-	-	-	-	-	-	-	-	O	R	O	O	R	R	O	-	O	R	-	O	-	-	-	O
Malvaviscus arboreus	Turks cap hibiscus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	R	O	-	-	-	-
Sida fallax	'Ilima	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sida rhombifolia	Cuba jewt	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thespesia populnea	Milo	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	R	-	-	-	-	-
Moraceae (Mulberry family)																										
Ficus benghalensis	Indian banyan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-
Ficus benjamani		-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	R
Ficus elastica	Indian rubber tree	-	-	R?	R?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ficus microcarpa	Chinese banyan	-	-	-	-	-	-	-	-	O	-	-	-	O	-	-	-	-	-	-	R	-	-	R	-	R
Ficus sp.	Unknown ficus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	O	-	-	-	-
Morus alba	White mulberry	-	-	-	R	-	-	-	-	R	-	-	-	R	-	-	-	-	R	R	-	-	-	-	-	-
Myrtaceae (Myrtle family)																										
Eugenia uniflora	Suriname cherry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-
Psidium guajava	Guava	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-
Punica granatum	Pomegranite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nyctaginaceae (Four o'clock family)																										
Boerhavia repens	Alena	O	O/C	O	C	O	C	O	O	O	-	R	-	O	O	R	-	O	O	-	O	-	O	O	R	-
Bougainvillea spectabilis	Bougainvillea	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	R	O	O	-	-	-	-
Mirabilis jalapa	Four o'clock	-	-	-	-	-	-	-	-	-	O	-	-	-	-	O	-	-	O	-	-	-	-	-	-	-
Oleaceae (Olive family)																										
Jasminium sambac	Pikake	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Noronhia emarginata	Madagascar olive	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Olea europaea ssp. africanus	African olive ?	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Malvaceae (Mallow family)																										
Abutilon grandifolium	Hairy abutilon	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hibiscus esculentus	Okra	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hibiscus rosa-sinensis	Red hibiscus	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
Hibiscus tiliaceus	Hau	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-
Hibiscus sp.	Unknown hibiscus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malva parviflora	Cheese weed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Malvastrum coromandelianum spp. coron	False mallow	R	O	O	R	R	-	-	-	-	-	-	O	-	-	-	R	R	-	-	-	-	-	-	-	-
Malvaviscus arboreus	Turks cap hibiscus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sida fallax	'Ilima	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sida rhombifolia	Cuba jewt	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thespesia populnea	Milo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moraceae (Mulberry family)																										
Ficus benghalensis	Indian banyan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ficus benjamani		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R
Ficus elastica	Indian rubber tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ficus microcarpa	Chinese banyan	-	R	-	-	-	-	-	-	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-	-	R
Ficus sp.	Unknown ficus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Morus alba	White mulberry	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
Myrtaceae (Myrtle family)																										
Eugenia uniflora	Suriname cherry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Psidium guajava	Guava	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Punica granatum	Pomegranite	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nyctaginaceae (Four o'clock family)																										
Boerhavia repens	Alena	-	O	O	R	O	C	O	O	O	R	-	R/O	-	O	O	O	-	R/O	-	O	-	O	-	O	-
Bougainvillea spectabilis	Bougainvillea	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
Mirabilis jalapa	Four o'clock	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oleaceae (Olive family)																										
Jasminium sambac	Pikake	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Noronhia emarginata	Madagascar olive	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-
Olea europaea ssp. africanus	African olive ?	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Onagraceae (Evening primrose family)																										
Oenothera laciniata	Evening primrose	O	-	O	-	O	O	O	O	-	-	R	R	-	-	-	O	-	O	-	R	-	-	R	O/C	O
Oxalidaceae (Wood sorrel family)																										
Oxalis corniculata	Yellow wood sorrel	-	-	-	-	-	-	O	-	-	O	-	-	O	O	O	R	-	O	O	R/O	O	O	O	R	O
Oxalis corymbosa	Shamrock	-	-	-	-	-	-	-	-	-	O	-	R	O	R	-	-	-	O	O	R/O	O	-	O	-	R
Passifloraceae (Passion flower family)																										
Passiflora edulis	Liliko'i	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Piperaceae (Pepper family)																										
Peperomia sp. obtusifolia ?	Alien peperomia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-
Plantaginaceae (Plantain family)																										
Plantago lanceolata	Narrow leaved plantain	-	-	-	-	O	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-
Plantago major	Common plantain	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plumbaginaceae (Leadwort family)																										
Plumbago auriculata	Plumbago	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polygonaceae (Buckwheat family)																										
Antigonon leptopus	Mexican creeper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coccoloba uvifera	Sea grape	-	O	O/C	O	O	R	R/O	-	O	R	-	-	O	R	-	-	-	R	-	R	-	-	-	-	-
Portulacaceae (Purslane family)																										
Portulaca afra	Jade tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-
Portulaca lutea	'Ihi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Portulaca oleracea	Common purslane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Portulaca sp.	Unknown 'ihi	O	O	O	O	O	O	O	-	O	R	R	R	O	-	R	-	-	O	R	O	O	R	-	-	O
Primulaceae (Primrose family)																										
Anagalis arvensis	Scarlet pimpernel	O	O	O	O	O	-	R	O	-	-	-	-	O	-	-	O	-	-	O	R	-	O	R	O	O
Rosaceae (Rose family)																										
Fragaria	Strawberry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-

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		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Onagraceae (Evening primrose family)																										
Oenothera laciniata	Evening primrose	C	R	R	R	R	O	O	O	O	O	-	O	O	R	O	O	O	R	C	O	O	O	C	O	C
Oxalidaceae (Wood sorrel family)																										
Oxalis corniculata	Yellow wood sorrel	O	-	O	O	O	R/O	O	O	-	-	O	R/O	-	-	O	O	-	R	-	-	-	-	-	-	-
Oxalis corymbosa	Shamrock	-	-	-	-	-	R	-	-	-	R	-	R	-	-	-	O	-	-	-	-	-	-	-	-	-
Passifloraceae (Passion flower family)																										
Passiflora edulis	Liliko'i	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Piperaceae (Pepper family)																										
Peperomia sp. obtusifolia ?	Alien peperomia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plantaginaceae (Plantain family)																										
Plantago lanceolata	Narrow leaved plantain	O	O	O	-	-	-	-	-	-	-	-	R	-	R	R	O	O	-	-	-	-	-	-	-	O
Plantago major	Common plantain	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Plumbaginaceae (Leadwort family)																										
Plumbago auriculata	Plumbago	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Polygonaceae (Buckwheat family)																										
Antigonon leptopus	Mexican creeper	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Coccoloba uvifera	Sea grape	R	R	R	-	R	O	-	O	-	-	R	R	-	-	-	R	-	-	-	-	-	R	-	O	-
Portulacaceae (Purslane family)																										
Portulaca afra	Jade tree	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Portulaca lutea	'Ihi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Portulaca oleracea	Common purslane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Portulaca sp.	Unknown 'ihi	R/O	O	O	R/O	R	R/O	O	O	R	R/O	-	O	O	R	O	O	O	-	R	R	-	R	O	O	O
Primulaceae (Primrose family)																										
Anagalis arvensis	Scarlet pimpernel	C	O	O	O	R/O	O	O	O	O	O	O	O	O/C	-	O	O	O	O	O	-	O	O	O	-	O
Rosaceae (Rose family)																										
Fragaria	Strawberry	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Rosa sp.	Rose	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	O	-	R/O	-	-
Rubiaceae (Coffee family)																										
Gardenia sp.	Gardenia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rutaceae (Citrus family)																										
Citrus limon	Lemon, meyer	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Citrus paradisi	Grapefruit, star-ruby, whit	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Citrus sinensis	Orange, valencia, navel, b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Citrus sp.	Unknown citrus	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	O	O	-	-	-	-
Murraya paniculata	Mock orange	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schrophulariaceae (Figwort family)																										
Bacopa monnieri	'Ae'ae	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Russelia equisetiformis	Coral / firecracker plant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	O	-	-	-	-
Solanaceae (Tomato family)																										
Capsicum annuum	Red pepper	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	O	O	O	-	O	-	R
Capsicum annuum var. grossum	Bell pepper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	O	-	-	-	-	-
Cestrum nocturnum	Night cestrum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-
Lycopersicon esculentum	Tomato	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	O	O	-	O	-	-
Lycopersicon pimpinellifolium	Cherry tomato	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-
Solanum americanum	Popolo	O	O	O	-	O	O	O	O	O	O	O	O	O	O	O	O	-	C	C	O	O	O	C	R	C
Solanum linnaeanum	Apple of Sodom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-
Solanum melongena	Eggplant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	R	O	-	R/O	-	-
Solanum nelsonii	Popolo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown Solanaceae (Solanum?)	Purple flowered	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown Solanaceae (Solanum?)	White flowered	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sterculiaceae (Cocoa family)																										
Waltheria indica	'Uhaloa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tropaeolaceae (Nasturtium family)																										
Tropaeolum majus	Nasturtium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Urticaceae (Nastrutium family)																										

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Rosa sp.	Rose	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
Rubiaceae (Coffee family)																										
Gardenia sp.	Gardenia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rutaceae (Citrus family)																										
Citrus limon	Lemon, meyer	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Citrus paradisi	Grapefruit, star-ruby, whit	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Citrus sinensis	Orange, valencia, navel, b	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Citrus sp.	Unknown citrus	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Murraya paniculata	Mock orange	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Schrophulariaceae (Figwort family)																										
Bacopa monnieri	'Ae'ae	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Russelia equisetiformis	Coral / firecracker plant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solanaceae (Tomato family)																										
Capsicum annuum	Red pepper	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	-
Capsicum annuum var. grossum	Bell pepper	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cestrum nocturnum	Night cestrum	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lycopersicon esculentum	Tomato	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lycopersicon pimpinellifolium	Cherry tomato	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solanum americanum	Popolo	O	O	O	C	O	O/C	O	O	O	O	O	C	O	C	C	C	O	R	-	-	-	O	O	O	O
Solanum linnaeanum	Apple of Sodom	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solanum melongena	Eggplant	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-
Solanum nelsonii	Popolo	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown Solanaceae (Solanum?)	Purple flowered	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-
Unknown Solanaceae (Solanum?)	White flowered	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-	-
Sterculiaceae (Cocoa family)																										
Waltheria indica	'Uhaloa	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tropaeolaceae (Nasturtium family)																										
Tropaeolum majus	Nasturtium	-	-	-	-	-	R	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Urticaceae (Nastrutium family)																										

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

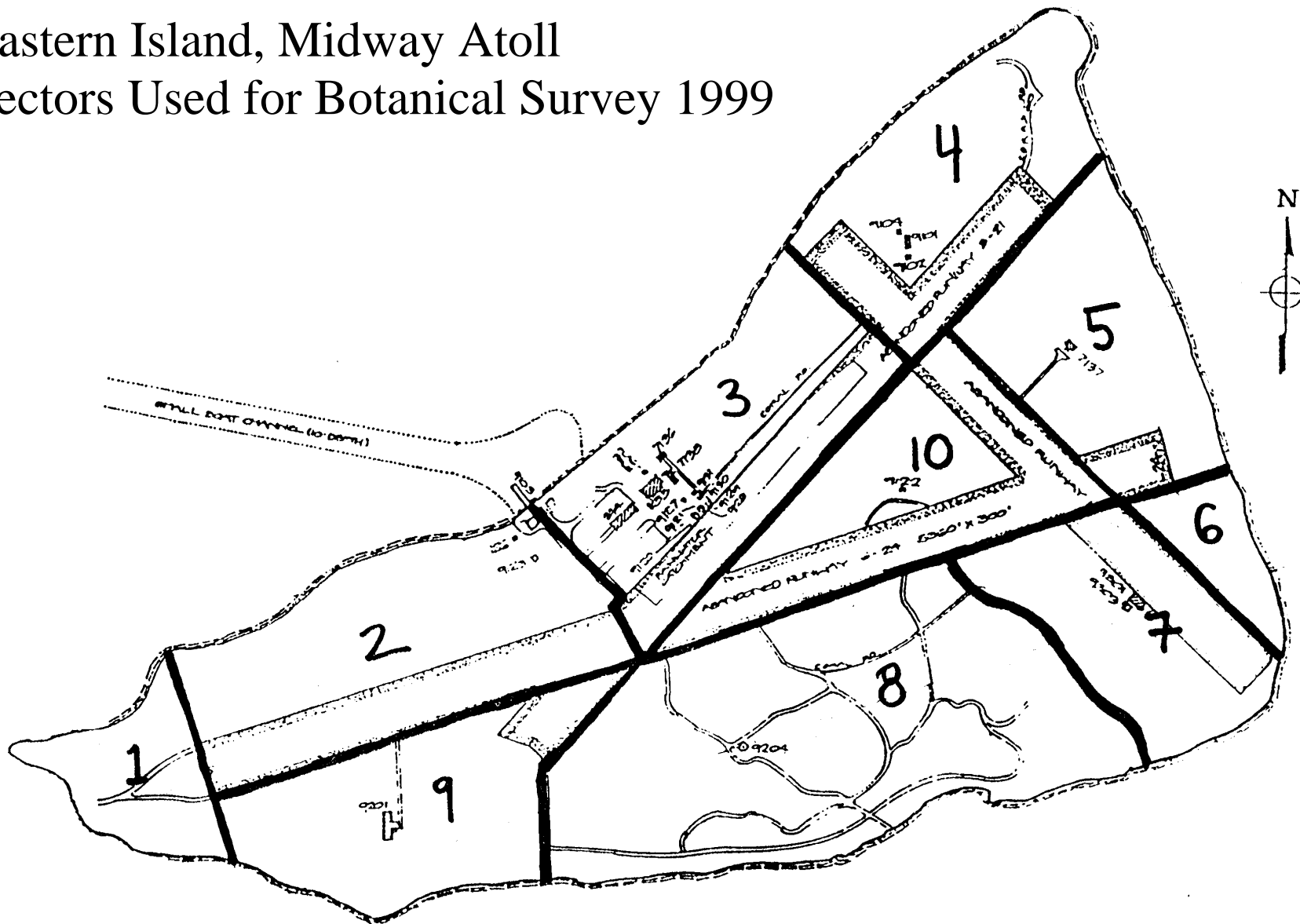
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
<i>Pilea microphylla</i>	Artillery plant	-	R	-	O	O	-	-	-	-	-	-	-	O	R	-	-	-	O	O	O	O	-	O	-	R
Unkneon uticaceae ?	Large artillery plant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-
Verbenaceae (Vervain family)																										
<i>Lantana camara</i>	Lantana	-	-	-	-	-	-	-	R	O	-	-	-	-	-	-	-	-	-	-	R	-	-	-	R	-
<i>Phyla nodiflora</i>		-	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Stachytarpheta dichotoma</i>	Oi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Stachytarpheta jamaicensis</i>	Owi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Verbena littoralis</i>	Ha'uowi, vervain	-	-	-	-	-	-	R	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-
<i>Vitex trifolia</i> var. <i>subtrisecta</i> f. <i>subtrisecta</i>	Pohinahina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Vitex trifolia</i> var. <i>subtrisecta</i> f. <i>variegata</i>	Pohinahina	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-
Violaceae (Violet family)																										
<i>Viola odorata</i>	Violet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vitaceae (Grape family)																										
<i>Vitis</i> sp. <i>vinifera</i> ?	Grape	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	-
Zygophyllaceae (Tribulus family)																										
<i>Tribulus cistoides</i>	Nohu	O	R	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-	-	R	-	-	-	-	-
Unknown others																										
	Radicio ? (lettuce like)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-
	Kohlrabi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R	-	-	-	-	-

Plant List - Sand Island, Midway Atoll

March - June 1999
Forest Starr and Kim Martz

		26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
<i>Pilea microphylla</i>	Artillery plant	-	-	-	-	-	-	-	-	-	-	-	O	-	-	-	-	-	-	-	-	-	-	-	-	O
Unkneon uticaceae ?	Large artillery plant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Verbenaceae (Vervain family)																										
<i>Lantana camara</i>	Lantana	-	O	O	O	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Phyla nodiflora</i>		O	O	-	-	-	-	O	O	-	-	-	R	C	-	-	-	-	-	R	O	-	-	-	-	O
<i>Stachytarpheta dichotoma</i>	Oi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Stachytarpheta jamaicensis</i>	Owi	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Verbena littoralis</i>	Ha'uowi, vervain	R/O	-	O	-	-	-	-	-	-	O	-	R	-	R	O	-	-	-	-	-	-	-	-	-	O
<i>Vitex trifolia</i> var. <i>subtrisecta</i> f. <i>subtrisecta</i>	Pohinahina	-	O	O	-	-	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Vitex trifolia</i> var. <i>subtrisecta</i> f. <i>variegata</i>	Pohinahina	-	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Violaceae (Violet family)																										
<i>Viola odorata</i>	Violet	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vitaceae (Grape family)																										
<i>Vitis</i> sp. <i>vinifera</i> ?	Grape	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zygophyllaceae (Tribulus family)																										
<i>Tribulus cistoides</i>	Nohu	-	-	-	-	-	-	-	-	-	-	-	-	-	R/O	-	-	-	-	-	R	-	O	-	O	-
Unknown others																										
	Radicio ? (lettuce like)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Kohlrabi	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Eastern Island, Midway Atoll
Sectors Used for Botanical Survey 1999



Checklist of plants on Eastern Island, Midway Atoll											
March - June, 1999 Forest Starr and Kim Martz		SECTORS									
		1	2	3	4	5	6	7	8	9	10
- = Not found											
R = Rare											
O = Occasional											
C = Common											
D = Dominant											
Cyperaceae (Sedge family)											
Fimbristylis cymosa	Button sedge	-	R/O	O	R	-	-	O	-	-	O
Liliaceae (Lily family)											
Crinum asiaticum	Crinum lily	-	-	R	-	-	-	-	-	-	-
Poaceae (Grass family)											
Chloris petraea		-	R/O	-	-	-	-	-	-	-	-
Cynodon dactylon	Bermuda grass	R	O	C/D	O	O	C	O	R	O	C
Dactyloctenium aegyptium	Beach wire grass	O	O	C	R	O	C	R	-	O	O
Digitaria ciliaris	Henry's crab grass	O	O	C	O	-	R	-	R	O	R
Eleusine indica	Goose grass	O	O	C	O	O	O	O	O	O	O
Eragrostis variabilis	Emaloa, Kawelu	-	O	R	R	-	-	O	-	-	R/O
Lepturus repens		R	C	R	R	-	-	-	-	-	-
Setaria verticillata	Bristly foxtail	R	O	O	O	-	C	O	O	-	C
Aizoaceae (Carpetweed family)											
Sesuvium portulacastrum	'Akulikuli	R	-	-	R	-	-	-	R	-	-
Asteraceae (Daisy family)											
Bidens alba var. radiata	Spanish needles	O	R	-	-	-	-	-	-	R	-
Conyza canadensis	Horseweed	O/C	C/D	C	O	R	-	R	-	-	O
Pluchea symphytifolia	Sour bush	-	R/O	R	R	-	-	R	-	-	-
Sonchus oleraceus	Sow thistle	O	O	O	O	R	O	-	-	-	-
Verbesina encelioides	Golden crown beard	C/D	D	D	C/D	D	D	D	D	C/D	D
Boraginaceae (Heliotrope family)											
Heliotropium procumbens var. depressum		-	O	-	-	-	-	-	-	-	-
Tournefortia argentea	Tree heliotrope	C	O/C	R	O	C	O	O	O	O	O
Brassicaceae (Mustard family)											
Brassica nigra	Black mustard	-	R	-	O	O/C	C	C	C/O	-	O
Coronopus didymus	Swine cress	R	O	D	O	C	C	C	C	O	O
Lobularia maritima	Sweet alyssum	C/D	C/D	C	C/D	D	O	D	C	C	C
Caryophyllaceae (Pink family)											
Spergularia marina	Saltmarsh sand spurry	R	R	O	-	-	O	R/O	R/O	-	-
Casuarinaceae (Casuarina family)											
Casuarina equisetifolia	Ironwood	R	R	C	O	R	-	R	O	O	O
Convolvulaceae (Morning glory family)											

Checklist of plants on Eastern Island, Midway Atoll											
March - June, 1999 Forest Starr and Kim Martz		SECTORS									
		1	2	3	4	5	6	7	8	9	10
<i>Ipomoea pes-caprae</i> ssp. <i>brasiliensis</i>	Beach morning glory	-	-	-	O	-	-	-	-	-	-
Euphorbiaceae (Spurge family)											
<i>Chamaesyce hypericifolia</i>		-	-	R	-	-	-	-	-	-	-
<i>Chamaesyce prostata</i>	Small ground fig	-	-	R	O	-	-	R	-	-	-
<i>Euphorbia cyathopora</i>	Wild poinsettia	-	-	O/R	-	-	-	-	-	-	-
Goodeniaceae (Goodenia family)											
<i>Scaevola sericea</i>	Naupaka kahakai	C	O/C	R	C/D	D	O	O	O	O/C	R/O
Nyctaginaceae (Four o'clock family)											
<i>Boerhavia repens</i>	Alena	O	C/D	O	C	O	C	C	C	O/C	C
Onagraceae (Evening primrose family)											
<i>Oenothera laciniata</i>	Evening primrose	-	-	-	R	-	-	-	-	-	-
Polygonaceae (Buckwheat family)											
<i>Coccoloba uvifera</i>	Sea grape	-	R	-	-	-	-	-	O	-	O/C
Portulacaceae (Purslane family)											
<i>Portulaca</i> sp.	'Ihi, common purslane, pig weed	O	O	O	O	O	C	O	O	O	O/C
Primulaceae (Primrose family)											
<i>Anagalis arvensis</i>	Scarlet pimpernel	R	R	R	O	R	R	R	-	R	-
Solanaceae (Tomato family)											
<i>Solanum americanum</i>	Popolo	O/C	C	O	O	-	R	-	-	O	-
Zygophyllaceae (Tribulus family)											
<i>Tribulus cistoides</i>		O	O/C	R	C	C/O	O	O	O	R	O

Checklist of plants on Spit Island, Midway Atoll		DISTRIBUTION
March - June, 1999 Forest Starr and Kim Martz		
D=Dominant		
C=Common		
O=Occasional		
R=Rare		
Monocots		
Cyperaceae (Sedge family)		
Fimbristylis cymosa	Button sedge	C
Poaceae (Grass family)		
Chloris petraea		C
Dactyloctenium aegyptium	Beach wire grass	C
Eragrostis paupera		O
Lepturus repens		O
Setaria verticillata	Bristly foxtail	R/O
Dicotyledonae		
Aizoaceae (Carpetweed family)		
Sesuvium portulacastrum	'Akulikuli	C
Asteraceae (Daisy family)		
Bidens alba var. radiata/pilosa (unsure which one)	Spanish needles	R
Conyza canadensis	Horseweed	C
Pluchea symphytifolia	Sour bush	R
Pseudognaphalium sandwicense var. sandwicense	'Ena'ena	R
Sonchus oleraceus	Sow thistle	R/O
Verbesina encelioides	Golden crown beard	O
Boraginaceae (Heliotrope family)		
Tournefortia argentea	Tree heliotrope	C/D
Brassicaceae (Mustard family)		
Coronopus didymus	Swine cress	R/O
Lobularia maritima	Sweet alyssum	C/D
Caryophyllaceae (Pink family)		
Spergularia marina	Saltmarsh sand spurry	C
Casuarinaceae (Casuarina family)		
Casuarina equisetifolia	Ironwood	O
Euphorbiaceae (Spurge family)		
Chamaesyce sp.	Unknown spurge	R
Goodeniaceae (Goodenia family)		
Scaevola sericea	Naupaka kahakai	D
Nyctaginaceae (Four o'clock family)		

Checklist of plants on Spit Island, Midway Atoll		DISTRIBUTION
March - June, 1999 Forest Starr and Kim Martz		
Boerhavia repens	Alena	C/D
Onagraceae (Evening primrose family)		
Oenothera laciniata	Evening primrose	R/O
Polygonaceae (Buckwheat family)		
Coccoloba uvifera	Sea grape	R
Portulacaceae (Purslane family)		
Portulaca sp.	'Ihi	R
Solanaceae (Tomato family)		
Solanum americanum	Popolo	O
Solanum nelsonii	Glossy nightshade, popolo	R
Urticaceae (Nasturtium family)		
Pilea microphylla	Artillery plant	R
Zygophyllaceae (Tribulus family)		
Tribulus cistoides	Nohu	O