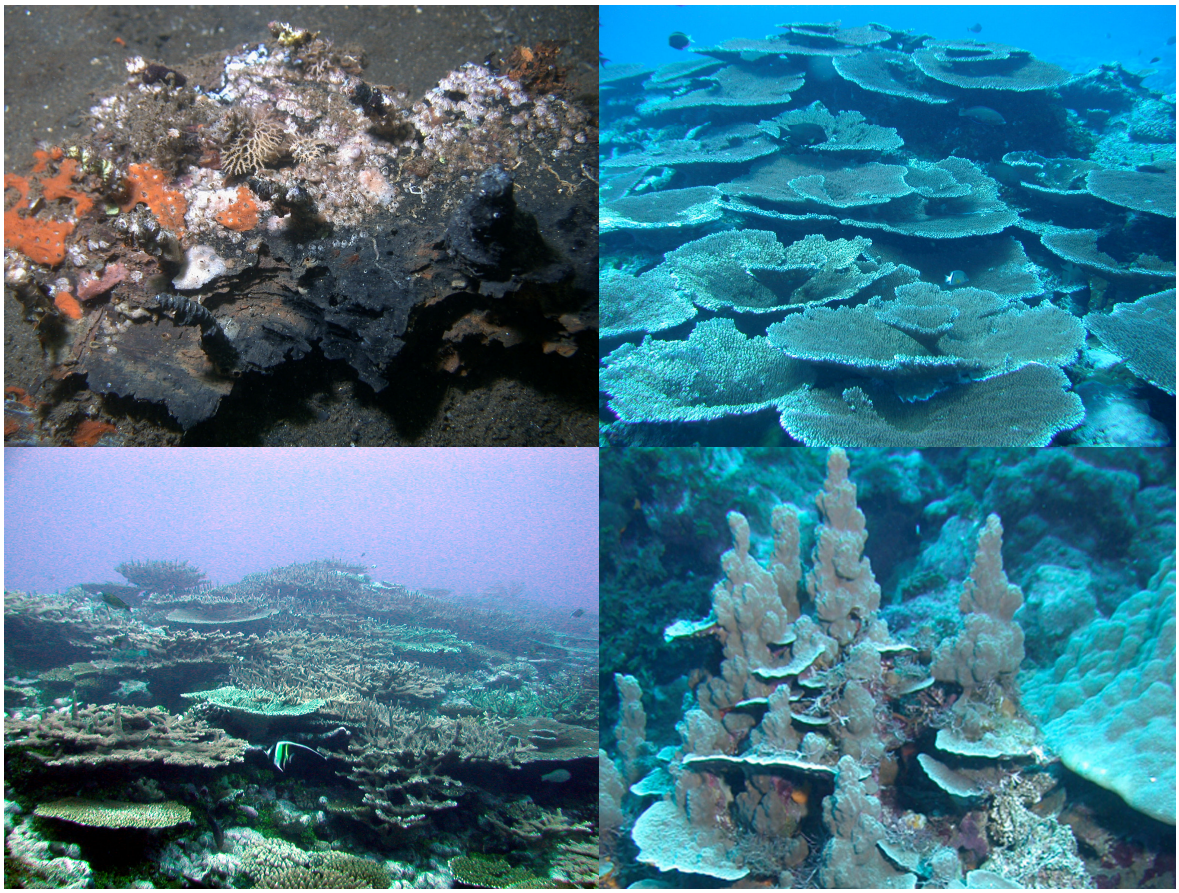

INTRODUCED MARINE SPECIES IN PAGO PAGO HARBOR, FAGATELE BAY AND THE NATIONAL PARK COAST, AMERICAN SAMOA

December 2003

COVER

Typical views of benthic organisms from sampling areas (clockwise from upper left): Fouling organisms on debris at Pago Pago Harbor Dry Dock; *Acropora hyacinthus* tables in Fagatele Bay; *Porites rus* colonies in Fagasā Bay; Mixed branching and tabular *Acropora* in Vatia Bay.

INTRODUCED MARINE SPECIES IN PAGO PAGO HARBOR, FAGATELE BAY AND THE NATIONAL PARK COAST, AMERICAN SAMOA

Final report prepared for the U.S. Fish and Wildlife Service, Fagatele Bay National Marine Sanctuary, National Park of American Samoa and American Samoa Department of Marine and Natural Resources.

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EXECUTIVE SUMMARY

The biological communities at ten sites around the Island of Tutuila, American Samoa were surveyed in October 2002 by a team of four investigators. Diving observations and collections of benthic observations using scuba and snorkel were made at six stations in Pago Pago Harbor, two stations in Fagatele Bay, and one station each in Vatia Bay and Fagasā Bay. The purpose of this survey was to determine the organisms greater than 0.5 mm in size occurring at each site, including benthic algae, macroinvertebrates and fishes, and to evaluate the presence and potential impact of nonindigenous (introduced) marine species. These results were compared with all reports of marine organisms for these areas by previous investigators.

A total of 1256 taxa, including 847 identified to species, were recorded from the survey. A clear spatial pattern was found for species richness by sampling site, with maximum numbers of taxa occurring at Fagatele and Vatia Bays, with the next highest occurring within Pago Pago Harbor at Onesosopo, the site nearest the east side of the harbor entrance. Numbers of taxa and species decreased dramatically with distance into the inner harbor, with minimal numbers occurring at the stations along the main shipping dock at Fagotogo and near the drydock and tuna canneries at Satala.

Using criteria that have been used for similar studies in Hawai‘i, Guam and North Queensland, Australia, only 28 nonindigenous or cryptogenic species (NIS) were detected on the entire survey, considerably fewer than have been determined on harbor surveys in Hawai‘i or Guam but more than found at each of four North Queensland ports. The distribution pattern by station for these introduced species was in direct contrast to the pattern found for the total taxa, both in numbers of taxa and as a percentage of the total biota. A maximum of 17 NIS occurred at the main dock station, comprising about 10% of the total biota identified at that site, and 5 NIS, or 5% of the total biota, were at the drydock station. Eight NIS were found at the Utulei site and seven at the Onesosopo site near the west and east sides of the entrance to the harbor respectively, but because of higher overall species richness, NIS comprised only about 1.6 to 2.1% of the total taxa identified at these sites. Percentages of total taxa composed by NIS were 1.0 and 1.3% at the Aūa and Leloaloa sites in the outer harbor. By comparison, NIS at the four coral reef sites outside the harbor ranged only 0.4-0.9%.

These results suggest that relatively few introduced species have been propagated in the waters of Tutuila, and those that do occur are mostly restricted to inner portions of Pago Pago Harbor and are not invasive in coral reef areas either within or outside of the harbor. Therefore, no direct intervention or mitigation measures appear to be required or are recommended at this time. A program of periodic rapid assessment and monitoring should be implemented to assure that potentially invasive introduced organism that may arrive in the future can be detected and intercepted in their early stages of propagation and spread. Also, a program should be considered to inspect the hulls of large, slow craft such as barges moving between harbors and islands that may transport introduced organisms already occurring in Pago Pago Harbor.

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I. INTRODUCTION

The island of Tutuila is the largest (ca. 140 km^2) of the six eastern islands of the Samoan Archipelago that comprise the U.S. Territory of American Samoa. It is also the major population center of American Samoa, with about 95% of the approximately 60,000 total population of the territory. Tutuila also is the site of American Samoa's only international airport and the major shipping port in Pago Pago Harbor, which has a population of approximately 10,000 (Green et al. 1997) and is also the location of two tuna canneries that provide the major source of local employment.

Because of its strategic location and the excellent anchorage afforded by the deep and sheltered waters of Pago Pago Harbor, Tutuila has been linked to the United States since 1872, when a treaty was negotiated for use of the harbor as a coaling station for the U.S. Navy. U.S. influence increased in 1900 when 20 chiefs of Tutuila ceded their lands and accepted U.S. rule while retaining their tribal authority and local customs (Masterman 1980). The U.S. Navy held administrative authority for American Samoa until 1951, when a new constitution was formed, providing for a civilian government. The relationship between Tutuila residents and U.S. interests was further developed by operations conducted during World War II, when the Naval Station on Tutuila became an important base for military operations, employing local Samoans, and many Samoans joined the U.S. armed forces.

Economic interdependence increased with the construction and operation of the first fish cannery by Van Camp Seafood in 1954, on the northwest shoreline of inner Pago Pago Harbor at Anua. This provided substantial employment and input to the cash economy, estimated at $4-5 million annually in 1980 (Masterman 1980). Presently two canneries operate at the site: Samoa Packing Company (a division of Van Camp Seafood) and Starkist Seafood. Also located within or near this inner harbor area are a ship dry dock and the Ronald Reagan Shipyard at Satala, the main port and shipping docks of American Samoa at Fagatogo, the Rainmaker Hotel at Nu'utūtai, and the point of discharge of Pago Pago's municipal sewage at about 45 m depth off Utulei Beach, all within a radius of less than 1 km.

Not surprisingly, this concentration of commercial uses and discharges in the inner section of Pago Pago Harbor has resulted in historical degradation of the harbor's water and environment. The tuna canneries discharged approximately 2 mgd ($7.6\ 10^3$ m^3/day) of untreated wastes near the shoreline at about 30 m depth until 1990, which provided a rich medium for growth of bacteria from the sewage discharge and other sources. Numerous studies cited in Sea Engineering Services Inc. and AECOS Inc. (1991) found a significant decline of water quality influenced by the combination of municipal and industrial wastewater, stream and surface runoff and the poor mixing and circulation in this inner harbor area. Some improvement resulted from treatment of the cannery wastes and removal of about 90% of their organic load prior to discharge, which began in August 1990. Further improvement in inner harbor water quality resulted from extending the canneries' outfall and point of discharge to the central part of the outer harbor (Green et al. 1997). The harbor, location of many early studies of reef corals and other biota, still supports

coral and reef growth, especially in the outer harbor east of a line between Goat Island Point and Ava Point.

Outside of the harbor, corals and reefs flourish around the island of Tutuila and two areas have been subject to considerable study and have been designated as areas for special management. Fagatele Bay, a 66 ha embayment on the southwest coast, is relatively isolated from shore access by steep cliffs and is recognized as a resource of high value (Thomas 1988). It was formally designated as a National Marine Sanctuary in April 1986 and is cooperatively managed by the American Samoan Government and the National Oceanic and Atmospheric Administration (NOAA). Only traditional uses of Fagatele Bay are allowed, and activities such as spear fishing, trawls, seines or fixed nets, and disturbance of the benthos are prohibited, along with discharge of any materials or substances. The bay is therefore in a virtually natural state with little anthropomorphic influence and is disturbed only by natural forces.

The other managed marine area on the island is the offshore zone of the National Park of American Samoa, which extends from Fagasā Bay to Afono Bay on the north coast of Tutuila, directly across the mountains from Pago Pago Harbor. This is one of the most scenic areas on the island, and the park occupies land leased from native villages and the American Samoa government. The National Park was authorized in 1988 and established in 1993, and along with areas on the islands of Ofu and Ta‘u, encompasses about 4245 ha of land, beaches and sea, with about one quarter of the total area lying under water. Only traditional fishing and gleaning of the reef are allowed in the park. Two sites in the National Park on Tutuila were surveyed in the present study, Vatia Bay, about one-third of the way from the Park’s eastern end, and Fagasā Bay at its western end.

The present study involved detailed examination of the marine biota at six locations in Pago Pago Harbor, an area that has been highly utilized for commercial and shipping activities for over 100 years, at two sites (Vatia Bay and Fagasā Bay) which have long been subject to traditional uses and one area (Fagatele Bay) which has been relatively undisturbed by human usage. All of these locations have had previous studies conducted that allow some degree of comparison of present with past environmental conditions and the composition of their biotic communities. The focus and purpose of the present study was to evaluate the biota for the presence and impact of anthropogenically introduced marine species.

Transport of introduced marine species among world ports has occurred with increasing frequency in the last 25 years, and introductions have sometimes produced substantial changes in the marine ecosystems and fisheries economies of receptor areas (Ruiz et al. 1997, Ruiz and Fofonoff 2000, Bax et al. 2001). Pago Pago Harbor is one of the major harbors in the central South Pacific and potentially represents a regional center where marine species introductions may enter and spread. Studies completed in Hawai‘i (Coles et al. 1997, 1999a, 1999b) have shown that harbors on O‘ahu have been a major recipient of introduced marine species and that new species continue to arrive. A total of 25 recently introduced marine and 15 new cryptogenic species have been found in O‘ahu ’s commercial and military ports and introduced species have

been found to compose 17-23% of the ports' total species. A similar level (19%) of composition of the total biota was found in the semi-enclosed waters of Kān'eohe Bay, O'ahu (Coles et al. 2002a), although studies on more open reef environments through have found much lower levels of introduced species throughout the Hawaiian Islands (Coles et al. 1998, DeFelice et al. 1998, DeFelice et al. 2002, Coles et al. 2002b), Johnston Atoll (Coles et al. 2001), and Guam (Paulay et al. 2002).

The high level of usage of Pago Pago Harbor docking facilities for cargo and tuna fish offloading and cleaning of vessel hulls at the dry-dock facility has provided ample opportunity for introduction of nonindigenous species into the harbor's marine environment. American Samoans are highly dependent on their marine resources for subsistence and cultural identity, and they would be greatly impacted by degradation of those resources. Despite the potential importance of disruption by introduced marine species of the ecology and economies of American Samoa, nothing has been known about the degree to which such introductions have occurred, whether they have affected the biota of the harbor, or if they have spread to other areas on Tutuila. In order to evaluate these potential impacts of nonindigenous species on the marine communities of Tutuila, the present study was conducted.

II. METHODS

A. Literature Search

A variety of sources of information on the environmental conditions and biological communities of Pago Pago Harbor, Fagatele Bay, Vatia Bay, and Fagasā Bay were examined. Literature consulted included published papers in the scientific literature, taxonomy-based monographs, and unpublished reports from environmental studies. Resources that were consulted in this search were the libraries of Bishop Museum, the University of Hawai‘i, Manoa, AECOS Inc., Honolulu Hawaiiand a bibliographic list available from the American Samoa Department of Marine and Wildlife Resources (DMWR).

B. Bishop Museum Collections

Bishop Museum collections databases for algae, invertebrates, and ichthyology were reviewed for all marine organisms that had been collected from Pago Pago Harbor, Fagatele Bay, Vatia Bay, and Fagasā Bay. The retrieved data were assembled into a combined database containing taxa identity, taxonomic authority, collection location and date, collector and collectors notes, when available.

C. Field Surveys

Samples were collected and underwater observations and photographs taken at six sites in Pago Pago Harbor, two sites in Fagatele Bay, and one site each in Vatia and Fagasā Bays (Figure 1) using methods previously employed on nonindigenous species surveys in the Hawaiian Islands and Johnston Atoll (Coles et al. 2001, Coles and Eldredge 2002). Sampling station locations, dates, coordinates and depths are summarized in Table 1.

Collections and observations were made by a team of four investigators while snorkeling or using scuba at each station and sampling all micro-habitats on the forereef, reef slope and on harbor pier pilings. Working from shore and using snorkel, the phycologist (PAS) recorded algal taxa observed in the intertidal and subtidal zones and collected specimens for later identification. One scuba diver (VB) recorded the identities of abundant invertebrate and macrofauna and fishes swimming in the area and did some sampling of benthic organisms, while the second (PAR) focused on collecting of invertebrates and macroalgae from hard surfaces and coral rubble. Macro-organisms were collected by hand, hard surfaces were scraped with a chisel, and coral rubble was placed in bags and transported back to a temporary laboratory at the DMWR in Pago Pago for inspection and removal of cryptic organisms. A third diver (SLC) recorded general observations of the habitats and dominant organisms at each station, took underwater digital photographs of specimens and made additional collections of macrofauna that were added to the specimen collections. In addition to these more detailed samplings and observations on Tutuila, rapid assessments were made on the island of Ofu in two moats and on reef crests offshore of the airstrip and the hurricane house.

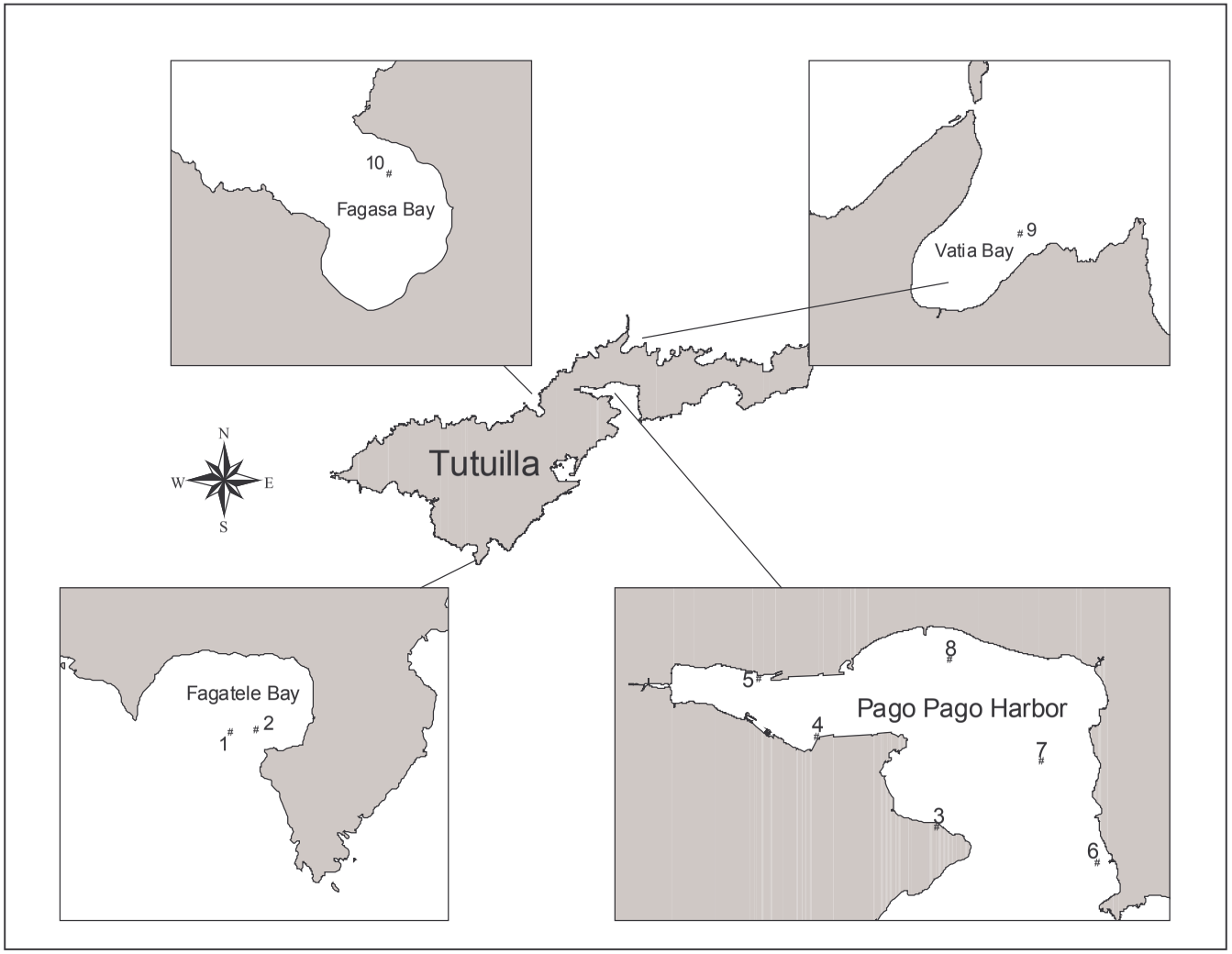

Figure 1. Tutuila station locations.

Table 1. Locations, dates, coordinates, and depths of stations sampled (PPH = Pago Pago Harbor).

			WGS84				UTM		Depth
Station	Location	Date	°S	Min	°W	Min	Northing	Easting	(m)
1	W. Fagatele Bay	14-Oct-02	14	21.96	170	45.85	525427	8411783	9-12
2	E. Fagatele Bay	14-Oct-02	14	21.95	170	45.77	525571	8411801	21-24
3	Utulei, PPH	13-Oct-02	14	17.02	170	40.67	543748	8420877	0.5-18
4	Main Dock, PPH	15-Oct-02	14	16.59	170	41.26	533688	8421671	+0.5-8
5	Dry Dock, PPH	15-Oct-02	14	16.32	170	41.54	533186	8422169	6-10
6	Onesosopo, PPH	12 & 17Oct-02	14	17.18	170	39.89	536150	8420571	1.5-24
7	Aūa, PPH	17-Oct-02	14	16.71	170	40.17	535656	8421453	2-23
8	Leloaloa, PPH	17-Oct-02	14	16.23	170	40.61	534857	8422343	2-22
9	East Vatia Bay	16-Oct-02	14	14.79	170	40.10	535779	8424986	5-28
10	Fagasā Bay	16-Oct-02	14	17.01	170	43.37	529900	8420894	4-21

Specimens were pre-processed at the DMWR laboratory at Pago Pago Harborto reduce volume of material to be shipped. Algal specimens were processed as described in Appendix A and identified by PAS at the International Ocean Institute in Townsville, Australia. Invertebrate taxa requiring relaxation, i.e. hydroids, anemones, ophiuroids, holothurians, and ascidians were held in a solution of saturated magnesium sulfate in seawater for at least 12 hours, transferred to 5% formalin-seawater, and then into 70% isopropyl alcohol. The remaining organisms were preserved directly in 70% isopropyl alcohol. Coral rubble was broken into small pieces of ca. 5-20 cm maximumdimension and treated in 5% formalin for 12 hours, the residue was washed though a 0.5 mm screen to remove small invertebrates, and these were transferred to 70% isopropyl for shipment to Bishop Museum in Honolulu where all invertebrate specimens were transferred to 70% ethyl alcohol for storage.

Invertebrate specimens were sorted under dissecting microscope magnification into major taxonomic groups and, when needed, sent to taxonomic experts for identification to species or the lowest practicable taxon (see Acknowledgments). Identified taxa were compiled into spreadsheets and converted into a database for comparisons with previous species reports at the same sites.

The Sorenson's Index of percent similarity, based on presence-absence of species at station pairs, was used to measure the degree of association of species composition among stations. By this index, the more species two stations share relative to their total species complements, the greater their taxonomic similarity. Based on a matrix of Sorensen's Index values, cluster analysis was used to organize stations into groups or clusters. Intercluster distances were calculated using an unweighted pair group average method. In this analysis, similar stations will form clusters distinct from other stations. These clusters are arranged in a hierarchical, treelike structure called a dendrogram. Calculation of the similarity measures and cluster analysis were performed using the Multi-Variate Statistical Package, ver. 3.1 (Kovach 2002).

III. RESULTS

A. Station Descriptions

Collections and observations were made at 10 stations around Tutuila, comprised of two sites in inner Pago Pago Pago Harbor, four sites in the outer harbor, two sites in Fagatele Bay and one site each in Vatia and Fagasā Bays. Descriptions of the environment at each station and the dates on which each wer surveyed are as follows:

Station 1. West Fagatele Bay. 14-Oct-02 (Latitude 14°21.96'S, Longitude 170°45.85'W).
The bottom slopes at a steep 30° slope from shore to a sandy area at the base of the coral zone at 20-25 m, with a substratum of mostly cobble to boulder size coral rubble on hard limestone reef. The live coral cover is about 20-50%, with abundant *Acropora hyacinthus* tables up to 2 m diameter and vestiges of old tables and outcrops heavily covered with calcareous algae, suggesting that these were alive at the time of a hurricane that occurred 12 years ago. Very few branching *Acropora* or other branching species are present, indicating this area to be exposed to frequent high wave disturbance.

Station 2. East Fagatele Bay. 14-Oct-02 (Latitude 14°21.95'S, Longitude 170°45.77'W).
The site is a rich coral area with high relief and channels littered with coral rubble and coarse sand. Coral is very abundant on ridges between channels and dominated by *Pocillopora, Acropora* and *Montipora* species with estimated cover up to 60%. Most of the rubble in the narrow channels is cemented together by sponges and calcareous algae, and much was covered by a surface of encrusting corals (mainly *Montipora* spp.). Below 15 m, the reef slopes more steeply into a zone of predominately small to medium sized coral rubble (18-22 m) and flattened out into a sand bottom at about 24 m. Water clarity was high and visibility was 20 m or more. A shallower area about 150 m offshore near the center of the bay in ca. 5-6 m depth has monospecific stands of *Merulina* and *Echinopora*. These begin at 5-7 m depth and extend to about 20 m in at least two large channels and an area where disease lesions on about 10-20% of the *A. hyacinthus* tables were noted.

Station 3 Pago Pago Harbor, Utulei. 13-Oct-02 (Latitude 14°17.02'S, Longitude 170°40.67'W)

The site is a reef in the vicinity of the Pago Pago sewage outfall pipeline that extends ca. 75 m from shore across the reef flat and down the reef slope at south end of Utulei Beach. The reef flat is ca. 0.5 m deep and with coarse sand pits 3-4 m deep stabilized by *Caulerpa* sp. algae and littered with rubble in pebble to cobble size ranges. Boulders of basalt rock that stabilize the sewer pipe are heavily covered with a small barnacle (*Chthamalus* sp.) nearshore. Towards the reef crest rubble increased in size, but was less abundant, and coral cover increased across this zone from <5% inshore to 10-15% on the reef foreslope to high abundance near the reef edge, dominated by massive *Porites, Pocillopora damicornis* and bushy *Acropora*. The echinoderms *Echinothrix diadema* and *Linkia laevigata* are common on reef flat. The reef is bisected by many cracks and crevices at outer margin with little to no macroalgal cover Outside the reef crest the

reef slope is nearly vertical to ca. 12 m depth, with many overhangs, ledges and caves mostly barren of coral cover, except for large colonies of up to 2 m diameter of *Diploastrea heliopora*. The soft bottom slope had a fair amount of large to medium sized rubblewith some coral on upper surfaces. Nonindigenous species noted and photographed were the hydroid *Pennaria disticha* and the polychaete *Salmacina dysteri*.

Station 4. Pago Pago Harbor Main Dock 15-Oct-02 (Latitude 14°16.59'S, Longitude 170°41.26'W) Obsevations were made and samples taken from the pilings and bottom from the east end of the main harbor docking area and around its corner to a smaller dock, ending at a rocky jetty and sheet piling near the DMWR offices. The depth ranged 4 to 10 m, with a bottom of coarse sand with a thin muddy surface and abundant trash and metal scrap providing hard surfaces for organism settlement. Samples were taken from dock pilings that support abundant fouling, including some species recognized as nonindigenous in Hawai‘i, i.e. *Pennaria disticha, Schizoporella* cf*. errata,* and *Mycale* sp. (Plates A, C, D, F). The echinoderms *Diadema setosum* and *Echinothrix diadema* were abundant in shallow area along the second dock, and oysters were abundant in the shallow subtidal on the sheet piling and rock jetty. The water was very turbid and visibility only ca. 3-4 m.

Station 5. Pago Pago Harbor Dry-Dock 15-Oct-02 (Latitude 14°16.32'S, Longitude 170°41.54'W) This site is near the head of harbor on its north side along the edge of a seawall next to the Ronald Reagan Shipyard east of the tuna canneries. The bottom is steeply sloped and covered by coarse sand and muddy silt, barren of any macrobiota except where occurring on intermittent debris consisting of old tires, ropes, fiberglass and metal scrap which provide surfaces for fouling of sponges, bryozoans, and tunicates . Visibility was very low (1-2 m) in the surface layer due to runoff from recent rainfall, but visibility increased somewhat to 5-6 m near the bottom.

Station 6. Pago Pago Harbor, Onesosopo, 12 & 17-Oct-02 (Latitude 14°17.18'S, Longitude 170°39.89'W)

A narrow (ca. 150 m wide) fringing reef with high coverage of *Acropora* and mixed coral species drops steeply to a mixed sand/coral rubble bottom at ca. 25 m. The reef flat consists of a shallow 1-2 m deep sandy moat area with ca. 5-20% coral cover and few narrow, shallow grooves directed towards the reef. The grooves are lined with pebble to cobble sized rubble encrusted with sponges and tunicates. Thickets of staghorn *Acropora* from 10 to 30 m wide and 20-30% cover occur at 1-2 m depth along an offshore moat area. Approaching the outer fringing reef crest is a shallow zone of mixed rubble, some of which was heavily encrusted with calcareous algae or coral with <20% cover. The reef crest has numerous cracks and crevices. *Acropora* spp., *Pocillopora* spp., and *Millepora* (mainly *platyphylla*) dominated the reef crest, which had patchy coral cover but ranged up to ca 40-60% cover. The outer reef ranged from a steeply sloping (ca. 60°) hard surface littered with pebble to cobble sized rubble to a wall-like drop-off, which had a few overhangs but was riddled with cracks and crevices. Coral cover decreased substantially below the reef edge where it was dominated by *Diploastrea, Echinophyllia, Coscinaria* and the soft coral *Lobophytum*. The hard wall slope ended between 6-12 m depth where a steep soft bottom slope continued and was covered in pebble to cobble sized rubble

heavily encrusted on the bottom side and occasional hard corals on the top. Coral cover on the deeper slope was <10% and patchy. Visibility on the two days this area was sampled was 10-15 m.

Station 7. Pago Pago Harbor, Aūa, 17-Oct-02 (Latitude 14°71'S, Longitude 170°41.17'W).
The site is near a channel formed by river outflow ca. 500 m northeast of the site and near the locations of previous coral transects (Mayor 1924, Dahl and Lamberts 1977, Green et al. 1997). The reef top at 1.5 m is quite barren near the reef edge, with coral cover mostly comprised of scattered *Pocillopora damicornis* and corymbose *Acropora*, with abundant fleshy and calcareous macroalgae. The reef slope drops nearly vertically to ca. 13.5 m, below which is a rubble rock and coarse sediment bottom on a 60° slope to the reef base at ca. 25 m depth. Good coral cover occurs on the vertical wall dominated by stands of *Montipora, Echinopora, Echinophyllia* and *Diploastrea* along with abundant calcareous algae. Both white and colored *Dendronepthya* soft corals were noted. The reef was highly penetrated with many boring organisms, and sections of reef and coral colonies could be easily broken off. *Peysonellia* and other calcareous algae are common or abundant on the deeper reef slope.

Station 8. Pago Pago Harbor, Leloaloa, 17-Oct-02 (Latitude 14°16.22'S, Longitude 170°40.61'W)
The reef top is consolidated limestone with abundant encrusting *Montipora* and *Pocillopora damicornis* among encrusting coralline algae. Channels 2-3 m deep extended from shore through the reef and projecting outcrops. Small *Acropora hyacinthus, Lobophytum* soft coral and yellow sponges occurred along the reef edge. At its edge the reef slopes downward at about 30° to ca. 30 m depth, with abundant *Pavona varians* and *Millepora* sp. and occasional *Echinophyllia aspera*, *Acropora hyacinthus* and *Galaxea* sp., abundant boring organisms, and an extensive field of *Mycedium elephantotus and Oxypora lacera* at ca 15 m depth.

Station 9. Vatia Bay 16-Oct-02 (Latitude 14°14.79'S, Longitude 170°40.10'W)
The bay is semi-protected and supports abundant coral growth, especially approaching the shelf break at 8-10 m depth. Humps and ridges between shallow channels form a fairly well developed spur and groove system with abundant *Acropora hyacinthus*, *A. robusta,* and *A. abrotanoides* on the ridges and outcrops. Other abundant corals were *Pocillopora* cf. *danae*, encrusting *Montipora, Platygyra, Hydnophora,* and *Favia* species. Large rubble pieces were in the channels, and encrusting calcareous algae in channels largely covered these and other surfaces, with coral cover reduced to ca. 10-20%. Below the reef front was a gentle sloping, fairly wide (60-80m) terrace that extended down to 14 m depth, with a few rubble and sand patches on the terrace and some shallow channels. Topography was highly variable across the terrace and ranged from <1-3m. Coral cover was 40-60% across the terrace with over 130 species noted. At the end of the terrace was a steep (60°) seaward slope that dropped to ca. 27 m, where it ended in a sandy bottom composed largely of *Halimeda* and shell fragments. The seaward portion had a few ledges and overhangs and was dominated by fairly large colonies *of Pavona, Montipora,* and *Leptoseris* spp.

Station 10. Fagasā Bay 16-Oct-02 (Latitude 14°17.01'S, Longitude 170°43.37'W)

The site drops steeply from a ca. 2 m deep reef flat on the east side of the bay to ca. 18 m depth at the reef base, with pronounced spur and groove development forming projecting ridges that merge into a coarse sandy bottom with pebble to cobble sized rubble. Coral cover on the reef slope was ca. 50% and diverse in species, with abundant *Halimeda*. *Porites rus* was common at the bottom of the reef slope, which has numerous ledges and overhangs. Shallow areas of the reef appear to have been sediment stressed and were largely algal covered, with numerous *Echinometra* burrows. *Porites lutea* was the dominant coral and total coral cover was ca. 10%.

B. Previous Species Reports

Review of the published and unpublished literature for Pago Pago Harbor and Fagetele, Vatia, and Fagasā Bays included previous species reports for marine algae, seagrasses, invertebrates, fishes, and turtles in 15 papers and reports, from studies conducted from 1917 to 2002 (Table 2). The Bishop Museum collections contain algae, invertebrates and fishes collected from these four areas between 1900 and 1984.

Table 2. References containing previous reports for the locations in the present study. Citation numbers for references are used in Table 3.

Citation	Reference	Pago Harbor	Fagatele Bay	Vatia Bay	Fagasā Bay
1	Mayor (1924)	1917			
2	Cary (1931)	1917			
3	Setchell (1924)	1920	1920		1920
4	Dahl & Lamberts (1977)	1973	1973		1973
5	Dames & Moore (1974)	1974			
6	Randall & Devaney (1974)			1974	
7	U. S. Army Corps of Engineers (1980)	1979	1979	1979	1979
8	Birkeland et al. (1987)	1985	1985		1985
9	Sea Engineering /Wass (1986)	1979 & 1985			
10	Sea Engineering /AECOS (1991)	1990			
11	AECOS Inc. (1991)	1990			
12	Maragos et al. (1994)	1991-92	1991-92	1991-92	1991-92
13	Green et al. (1997)	1995			
14	Green et al. (1999)		1985-95		
15	Work & Raymeyer (2002)	2002	2002	2002	
16	BPBM Collections	1900-83	1973-84	1964-74	1930-80

Details for these collection and observation records are in Table 3, and lists of all taxa previously reported in these areas are in Appendix B. Information is available from 14 of the 16 sources for Pago Pago Harbor, with eight sources available for Fagatele Bay, five for Vatia Bay and six for Fagasā Bay. A total of 562 taxa were previously reported for Pago Pago Harbor, while reported taxa for the remaining locations ranged from 160 in Vatia Bay to 631 in Fagatele Bay. For all four locations reef corals and fish comprised most of the identified taxa, ranging from 68% of the total

Table 3. Numbers of taxa in major groups and total biota reported for Pago Pago Harbor, Fagatele Bay, Vatia Bay, and Fagasā Bay by previous studies. Citation numbers refer to references in Table 2.

	Citation																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	All Studies
Pago Pago Harbor																	
Algae			71				6	4	6	10						5	93
Coral	19			16	44		34	42	25	29		19	22		6	2	129
Non-coral Invertebrates	3	4		3	3		22	5	29	21			2		3	16	71
Fishes					124		50		114	1	6					82	268
Turtle							1										1
Total Taxa	22	4	71	19	171		113	51	174	61	6	19	24		9	105	562
Fagatele Bay																	
Algae			22				2	39									55
Coral							8	96				47		122	3		151
Non-coral Invertebrates							3	132				2		4			125
Fishes							13	208						245		30	299
Turtle							1										1
Total Taxa			22				27	475				49		371	3	30	631
Vatia Bay																	
Algae						5	4									10	18
Seagrass						1	1										1
Coral						15	9					61				2	71
Non-coral Invertebrates						6	5					2				6	15
Fishes						44	43										55
Total Taxa						71	62					63				29	160
Fagasā Bay																	
Algae			3				4	20								4	30
Coral							13	81				30				1	101
Non-coral Invertebrates							3	35								67	45
Fishes							18									47	60
Total Taxa			3				38	136				30				58	236

at Vatia Bay to 79% at Fagasā Bay, demonstrating the emphasis on reef coral and fish studies that has been the case for most of the previous investigations, except for the early study by Setchell (1924), who conducted the first surveys of marine algae in American Samoa. The only previous study that identified substantial numbers of non-coral invertebrates was that of Birkeland et al. (1987), which reported 132 taxa in Pago Pago Harbor, Fagatele, or Fagasā Bays, most of them mollusks.

C. Present Survey

A total of 1256 taxa of algae, invertebrates and fishes were identified at the ten sites sampled in the present study, with 847 or 67% of these identified to species. All of the organisms observed or collected in this study are listed, along with those from previous reports, in Appendix B and their occurrence by station are shown in Appendix C. In addition observations of corals and fishes observed in the two moats and on reef crests on Ofu Island are listed in Appendix D. Distributions of the major taxonomic groups are shown in Table 4. Total taxa reported at each station ranged from a low of 102 at Station 5 (Dry Dock) to a high of 564 at Station 6 (Onesosopo), both in Pago Pago Harbor. Of the total 847 species identified in the present study 433 were new reports and included the first sponge, polychaete, bryozoan or ascidian species that have been identified for these sites, and 87 crustacean species were new reports while only 8 species had been previously reported for this group. By comparison 52% of algae species, 52% of reef corals and 65% of reef fishes listed in Appendix B had been previously reported, indicating the focus of previous studies on these major groups.

The taxa listed in Appendices B and C are a complete listing of all organisms identified for the ten sites surveyed. However, sampling at two stations Utulei (Station 3) and Onesosopo (Station 6) included surveys of invertebrates and fishes of the reef flat environment that were not conducted at the other stations, and the reef slope of Onesosopo was surveyed twice, once by snorkel on 12 October and once using scuba on 17 October 2002. In order to facilitate valid comparisons of the results among the ten stations, organisms from the reef flats at these stations were omitted, and only data from the 17 October sampling was used for Onesosopo. This resulted in reductions of total taxa by about 100 for each of these two stations from the values shown in Table 4.

The dendrogram of Sorensen coefficient percent similarities (Figure 2) indicates a major break at about 20% similarity between a cluster composed of the inner harbor (Stations 4 and 5) and the other eight stations. The rest of the stations also clustered according to their locations within and outside the harbor. Stations 3 and 6, which are nearest the harbor entrance on its east and west sides, form one station pair with about 55% similarity, as do stations 7 and 8, which are further into the harbor and east of the dock areas. The remaining cluster is composed of the four stations that are in bays outside of the harbor.

The distributions of numbers of taxa of algae, soft and hard corals, fish and non-coral invertebrates are shown in Figure 3 and total taxa in Figure 4, with the numbers of stations 6 and

Table 4. Numbers of taxa for major taxonomic groups and total biota at sampling stations in present study.

		Station									
Taxa	**Total No.**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Algae & Seagrass	147	47	47	56	8	1	34	35	14	31	42
Porifera	43	11	3	7	8	1	13	8	12	5	14
Hydrozoa	27	10	5	7	2	2	8	8	9	6	6
Anthozoa	209	113	96	92	5	4	123	66	70	132	99
Polychaetes & Worms	78	16	15	12	21	15	26	16	13	25	12
Mollusca	296	49	68	108	42	18	123	72	38	45	50
Copepoda and Cirripedia	13	1	3	1	5	3	8	4	0	1	0
Pericarida	53	20	20	2	14	10	23	14	15	9	10
Decapoda and Stomatopoda	76	6	21	21	19	7	24	23	12	13	14
Ectoprocta and Brachiopoda	26	9	3	5	11	1	1	0	0	0	0
Echinodermata	60	14	22	30	3	7	27	17	16	14	23
Ascidacea	13	0	0	1	4	5	7	3	2	3	4
Fishes	215	152	128	139	43	28	147	110	113	161	129
Total	1256	448	431	481	185	102	564	376	314	445	403

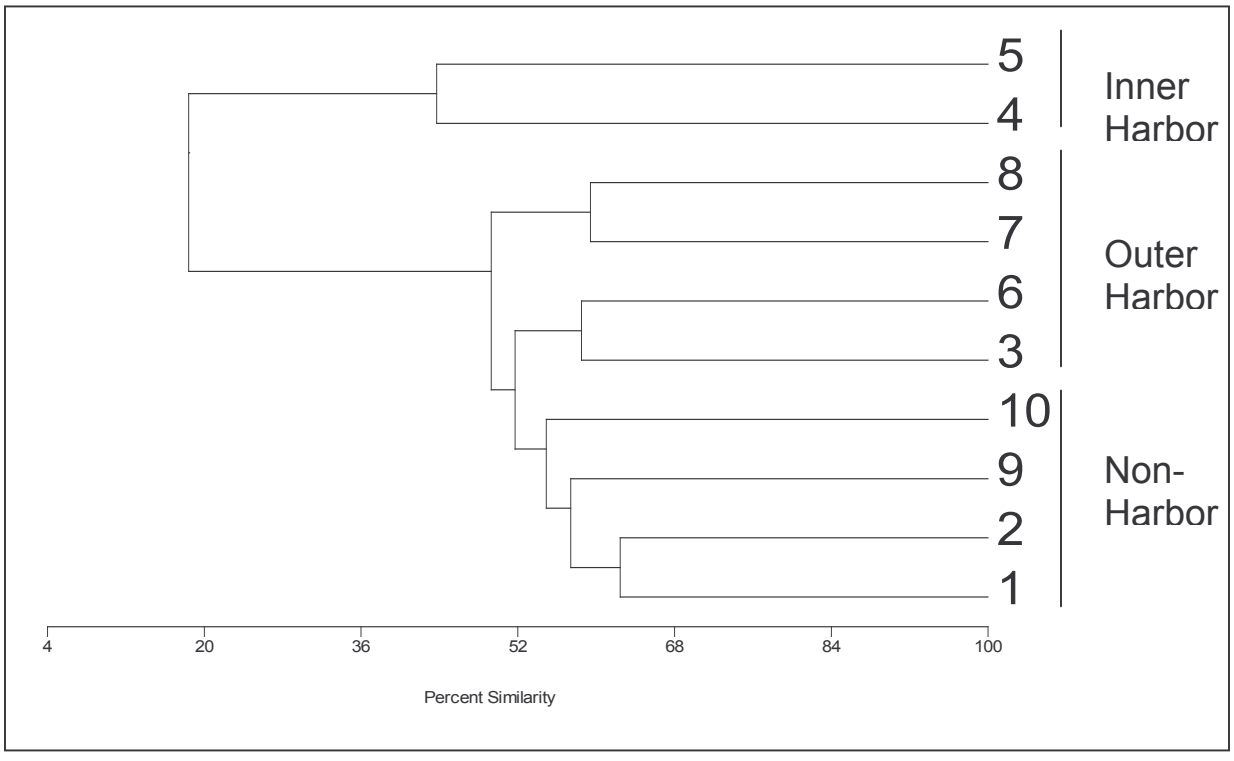

Figure 2. Dendrogram of Sorensen's coefficient percent similarities among station biota for present study.

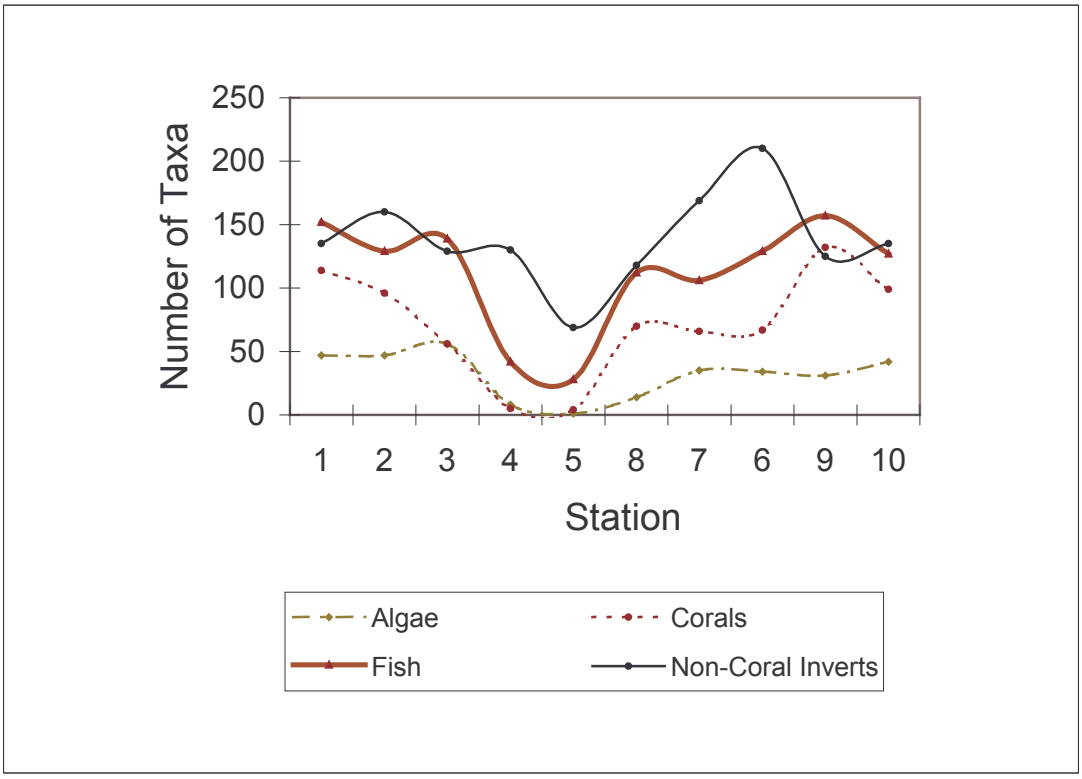

Figure 3. Distributions of numbers of taxa of algae, reef corals and non-coral invertebrates.

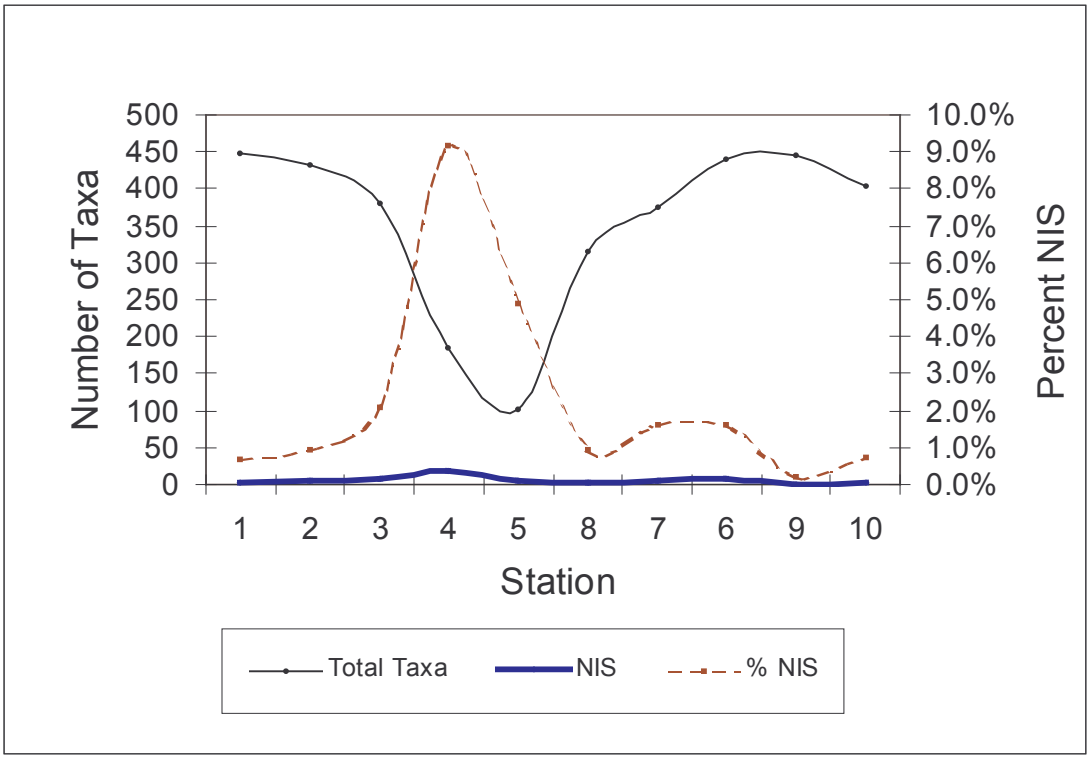

Figure 4. Distributions of numbers of total taxa and NIS (nonindigenous + cryptogenic species) among stations.

8 transposed on the graphs to correspond to their location in Pago Pago Harbor. All of these groups showed decreasing occurrence with proximity to the inner harbor, with their minimum numbers of taxa occurring at Stations 4 or 5. Interestingly, although maximum numbers of taxa for reef corals and fishes occurred in bays outside the harbor, numbers of non-coral taxa were greatest at Stations 6 and 7 in the outer harbor, resulting in numbers of total taxa at Station 6 about equal to the maximum values in Fagatele and Vatia Bays, where the highest numbers of algae, coral and fish taxa occurred. This suggests that the relatively turbid and eutrophic conditions at these outer harbor sites near the entrance support biota that occur both on coral reefs and in harbors, but that the coral reef associated organisms decline with further movement into the harbor. This transition is quite rapid, since Utulei (Station 3), less than 2 km southwest of the main dock and drydock stations, had high numbers of algae, fishes and non-coral invertebrates, resulting in the number of total taxa nearly as high or higher than at reef sites outside of the harbor.

D. Nonindigenous and Cryptogenic Species

As indicated in the previous reports summary in Table 3 and the list of organisms in Appendix B, most available information for the marine biota of American Samoa is limited to algae, reef corals and fishes, and little has been reported on non-coral invertebrates. This largely precludes an evaluation for this group of introduction status based on new species occurrences, since the present study is the first to sample and analyze a full complement of marine organisms in Pago Pago Harbor or the four bays surveyed. Therefore, species were categorized as native, nonindigenous or cryptogenic (i.e. of uncertain origin but with indications of being introduced, per Chapman and Carlton 1991) based upon studies and evaluations that have been made in Hawai‘i (Carlton and Eldredge in prep.), Guam (Paulay et al. 2002) or for port surveys in North Queensland, Australia (Hewitt et al. 1998, Hoedt et al. 2000, 2001), or were based on recognized geographic distributions of the species that may suggest an anthropomorphic introduction. We consider that this approach is more likely to overestimate, rather than underestimate, the likelihood of the species being assigned nonindigenous or cryptogenic status. Nonindigenous and cryptogenic species are hereinafter referred to collectively as NIS.

Using these criteria, a total of 28 species occurred on these surveys that may be considered nonindigenous or cryptogenic in American Samoa (Table 5), representing a total of 2.2% of the total taxa identified. These consist of two algae, one sponge, six hydroids, one polychaete, two barnacles, four amphipods, one isopod, two bivalves, six bryozoans, one ophiuroid and two tunicates. In addition, one amphipod (*Leucothoe micronesiae* Barnard) and one crab (*Panopeus pacificus* Edmondson) were found that are considered introduced in Hawai‘i but not in Samoa, based on their geographic distributions (R. C. DeFelice, pers. comm.), and a single dead shell of *Trochus niloticus* Linnaeus, 1758 was found at Onesosopo. *T. niloticus* was transported from Fiji to American Samoa in 1958, but no specimens had been observed as of April 1992 on several invertebrate surveys (Eldredge 1994). The two algae *Caulerpa serrulata* (Forsskål)

Table 5. Nonindigenous and cryptogenic marine species collected or observed on Tutuila surveys, October, 2002.

					Station									
Taxa	**Family**	**Genus Species**	**Authority**	**Status**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
CHLOROPHYTA	CAULERPACEAE	*Caulerpa serrulata*	(Forsskål) J. Agardh	Cryptogenic	x	x	x			x				x
RHODOPHYTA	HALYMENIACEAE	*Halymenia durvillei*	Bory de Saint Vincent	Cryptogenic	x	x	x							
PORIFERA	MYCALIDAE	*Mycale* sp.		Cryptogenic				x		x				
HYDROZOA	PLUMULARIIDAE	*Plumularia strictocarpa*	Pictect, 1893	Cryptogenic		x					x	x		
HYDROZOA	SERTULARIIDAE	*Dynamena crisioides*	Lamouroux, 1824	Cryptogenic				x		x				
HYDROZOA	SERTULARIIDAE	*Sertularella diaphana*	(Allman, 1885)	Cryptogenic										x
HYDROZOA	SERTULARIIDAE	*Thyroscyphus fruticosus*	(Esper, 1793)	Cryptogenic				x						
HYDROZOA	CLAVIDAE	*Turritopsis nutricula*	McCrady, 1856	Introduced			x							
HYDROZOA	HALOCORDYLIDAE	*Pennaria disticha*	(Goldfuss, 1820)	Introduced			x	x	x	x		x		
POLYCHAETA	SERPULIDAE	*Salmacina dysteri*	(Huxley, 1855)	Introduced		x	x	x						
CIRRIPEDIA	BALANIDAE	*Balanus amphitrite*	Darwin 1854	Introduced				x	x	x				
CIRRIPEDIA	BALANIDAE	*Balanus reticulatus*	Utinomi, 1967	Introduced							x			
AMPHIPODA	AORIDAE	*Bemlos virgus*	Myers, 1985	Cryptogenic									x	
AMPHIPODA	COROPHIIDAE	*Corophium ?insidiosum*	Crawford, 1937	Introduced				x						
AMPHIPODA	COROPHIIDAE	*Ericthonius brasiliensis*	(Dana, 1853)	Introduced				x						
AMPHIPODA	STENOTHOIDAE	*Stenothoe valida*	Dana, 1853	Cryptogenic				x	x		x			
ISOPODA	LIGIIDAE	*Ligia exotica*	Roux, 1828	Introduced				x						
BIVALVIA	ANOMIIDAE	*Anomia nobilis*	Reeve, 1859	Introduced				x						
BIVALVIA	CHAMIDAE	*Chama pacifica*	Broderip, 1834	Introduced						x				
ECTOPROCTA	BUGULIDAE	*Bugula dentata*	(Lamauroux, 1816)	Introduced			x							
ECTOPROCTA	BUGULIDAE	*Bugula neritina*	(Linnaeus, 1758)	Introduced				x						
ECTOPROCTA	ARACHNOPUSIIDAE	*Poricella robusta*	Hincks, 1884	Cryptogenic				x						
ECTOPROCTA	SAVIGNYELLIDAE	*Savignyella lafontii*	(Audouin, 1826)	Introduced	x		x	x						
ECTOPROCTA	SCHIZOPORELLIDAE	*Schizoporella* cf. *errata*	(Waters, 1878)	Introduced				x	x					
ECTOPROCTA	WATERSIPORIDAE	*Watersipora subtorquata*	(d'Orbigny, 1842)	Introduced				x						
OPHIUROIDEA	OPHIACTIDAE	*Ophiactis savignyi*	(Müller & Troschel, 1842)	Cryptogenic			x			x	x	x	x	x
ASCIDIACEA	STYELIDAE	*Styela canopus*	(Savigny 1816)	Introduced				x	x		x			
ASCIDIACEA	ASCIDIIDAE	*Phallusia (Ascidia) nigra*	Savigny, 1816	Introduced				x						
				Total NIS	3	4	8	17	5	7	6	3	1	3
				Total Taxa	449	431	380	185	102	440	376	314	445	403
				% NIS	0.7	0.9	2.1	9.7	4.9	1.6	1.3	1.0	0.4	0.7

J. Agardh and *Halymenia durvillei* Bory de Saint Vincent are tentatively considered cryptogenic based upon their occurrence in Apia Harbor, Western Samoa (PAS, Appendix A).

Most of the invertebrates listed in Table 5 are common in harbors in Hawai'i and many are widely distributed around the world. The hydroid *Pennaria disticha* (Goldfuss) (Plates C and D) is widely distributed worldwide, occurs in harbors and some bays throughout the main Hawaiian Islands and was reported in Guam (Paulay et al. 2002). *Pennaria disticha* and the barnacle *Balanus reticulatus* Utinomi were the only introduced invertebrates found at French Frigate Shoals in the Northwestern Hawaiian Islands (DeFelice et al. 2002). *Pennaria disticha* was also the most frequently found introduction in the present study, observed or collected at all of the harbor stations except at Aūa, and was abundant at the main dock (Plate C). The barnacle *Balanus amphitrite* Darwin is also widely distributed around the world and was the only introduced species in the present study that was reported in surveys at four North Queensland ports (Hewitt et al. 1998, Hoedt et al. 2000, 2001). Conspicuously absent in American Samoa is the introduced bryozoan *Amathia distans* Busk, which is a dominant fouling organism in harbors in the main Hawaiian Islands and occurred in both Guam and North Queensland port surveys. Of the remaining nonindigenous and cryptogenic species found in the present study, six of these were found on three surveys on Guam that identified 85 introduced or cryptogenic taxa among a total of 2828 taxa (Paulay et al. 2002). These are the sponge *Mycale* sp. (Plate A), the hydroids *Thyroscyphus fruticosus* (Esper) (Plate B) and *Turritopsis nutricula* McCrady, the polychaete *Salmacina dysteri* (Huxley) (Plate E), the bivalve *Anomia nobilis* Reeveand the ophiuroid *Ophiactis savignyi* (Müller and Troschel). The latter species is considered cryptogenic in Guam based on its distribution outside of the Indo-West Pacific and frequent association with artificial substrata, and has been demonstrated by mitochondrial DNA analysis to have been widely dispersed between the Pacific and western Atlantic Oceans (Roy and Sponer 2002). This species has not yet received introduced status in Hawai'i (Carlton and Eldredge In prep.), although it is abundant in the fouling fauna in O'ahu harbors (Coles et al. 1997, 1999a, Coles et al. 2002b). Interestingly, it did not occur at the two dock sites in the present study but rather on reef sites in the harbor and in Vatia and Fagasā bays.

The nonindigenous and cryptogenic invertebrates found in this study (Table 5) occur in harbors throughout the main Hawaiian Islands and many are often prominent and easily observed components of the fouling communities on pier pilings and other artificial surfaces in Hawaiian harbors. With the exception the hydroids *Plumularia strictocarpa* Pictect 1893 and *Dynamena crisioides* Lamouroux, the polychaete *Salmacina dysteri*, the bryozoan *Savignyella lafonti* (Audouin) and the ophiuroid *Ophiactis savignyi*, all were found only in Pago Pago Harbor. Two cryptogenic species the hydroid *Sertularella diaphana* and the amphipod *Bemlos virgus* occurred on at one site each ouside of the harbor. No NIS were abundant on coral reefs in or outside of the harbor and none were observed in the moats on Ofu. Both in terms of numbers of taxa and their percentage component of the total taxa identified, NIS increase with penetration into the inner harbor and proximity to the dock area stations, ranging from 1-4 species and 0.4 to 0.9% on reefs outside the harbor to 3-8 species and 1.0 to 2.1% on coral reefs within the harbor to 5-17 species

and 4.9 to 9.7% at the inner harbor dock stations (Table 5, Figure 4). This pattern contrasts directly with the one shown for distributions of total taxa at the stations (Tables 4 and 5, Figure 4). Introduced species are primarily confined to the inner areas of Pago Harbor and show little propensity for movement onto the more biologically diverse coral reefs, even areas only a few kilometers away from the docks within the inner harbor such as Aūa, where only three NIS were detected. Even where intermediate levels of NIS occur within the harbor such as at Utulei (Station 3), these were a relatively minor component of the total biotic community identified. None of the NIS appear to be invasive, i.e. propagating to a degree where they are in competition with local endemic or indigenous species or spreading beyond a limited distribution concentrated at the dock areas of inner Pago Pago Harbor.

IV. DISCUSSION

The results of this study present a clear pattern of decreasing numbers of introduced and cryptogenic species with distance from the dock areas in Pago Pago Harbor, and even less presence of marine introductions on coral reefs outside of the harbor. This minimal influence of NIS in the harbor is somewhat surprising, given the historical opportunity for introduction and proliferation of NIS from ocean-going vessels and the variety of environmental disturbances that have occurred there, especially in the inner harbor. Comparing the incidence of NIS within Pago Pago Harbor with harbors in Hawai‘i (Table 6), even the Pago Pago Harbor dock sites, which showed the highest levels of introductions, have far fewer numbers of NIS taxa with much lower percentages of the total biota than have been reported from Pearl Harbor, Honolulu Harbor and other harbors surveyed on the island of O‘ahu. Total NIS for each of the seven harbor areas on O‘ahu have ranged 36-95 species and 15-38% of the total identified taxa, compared to a maximum of 17 NIS and 9.7% of the total biota identified at the Pago Pago Harbor main dock. Overall NIS abundance in Pago Pago Harbor is still less than, but more closely resembles, Apra Harbor in Guam, where a total of 46 NIS (sponges, echinoderms and ascidians) comprised about 7% of the total identified invertebrate biota (Table 6). Apra Harbor is similar to Pago Pago in being relatively open to the ocean and supporting coral reefs in a truly tropical setting, unlike the semi-enclosed harbors of O‘ahu that occur in a less tropical environment. All of these harbors show substantially higher numbers of NIS than have been found in the four North Queensland Ports along the Australian coast where only 4-11 NIS have been determined in any survey, for a NIS component of only 0.8-2.3% of the total identified taxa. This is despite the fact that these Australian ports are largely used for bulk cargo shipping, which means that very large quantities of ballast water are released from bulk carriers when taking on their cargo loads.

The minimal presence of NIS on coral reefs both within Pago Pago Harbor and in bays outside of the harbor is encouraging and reflects a similar pattern found on most surveys in coral reef areas the Hawaiian Islands and Johnston Atoll (Table 7), although NIS values are again higher on some Hawaiian reefs than in American Samoa. The highest NIS values in Hawai‘i have been found in Kāne‘ohe Bay and Waikīkī, where the NIS components were of 19% and 7% respectively approaching or exceeding those occurring in some O‘ahu harbors, despite the high diversity of

Table 6. Summary of numbers of taxa for nonindigenous (N) and cryptogenic (C) species, total taxa and % of total that were NIS for harbors and ports on O‘ahu, Guam, and North Queensland, Australia.

Location	N	C	Total NIS	Total Taxa	% NIS	Source
Hawai‘i, O‘ahu						
Pearl Harbor	69	26	95	419	23	Coles et al. 1997, 1999a
Honolulu Harbor	51	22	73	487	15	Coles et al. 1999b
Keehi Lagoon	38	14	52	158	33	" " " "
Ala Wai Yacht Harbor	48	9	57	204	28	" " " "
Kewalo Basin	40	8	48	178	27	" " " "
Barber’s Point Deep Draft Harbor	33	12	45	150	30	" " " "
Kuapā Pond, Hawai‘i Kai	32	4	36	96	38	Coles et al. 2002c
Guam						
Apra Harbor	27	29	46	682	6.7	(Paulay et al. unpub. ms.)
Australia, North Queensland						
Hay Point Port	8	2	10	506	2.0	Hewitt et al. 1998
Mourilyn Harbor	2	2	4	401	1.0	Hoedt et al. 2000
Abbot Point Port	0	5	5	593	0.8	Hoedt et al. 2001
Lucinda Port	2	9	11	480	2.3	

Table 7. Summary of numbers of taxa for nonindigenous (N) and cryptogenic (C) species, total taxa and % of total that were NIS for coral reefs in the main and Northwest Hawaiian Islands, Johnston Atoll, and Guam

Location	N	C	Total NIS	Total Taxa	% NIS	Source
Hawai‘i						
Kāne‘ohe Bay	82	34	116	617	19	Coles et al. 2002a
Waikīkī	19	33	52	749	6.9	Coles et al. 2002b
Maunalua Bay	6	2	8	205	3.9	" " " "
Kaho‘olawe Island	3	0	3	298	1.0	Coles et al. 1998
Kaua‘i, eight sites	2	9	11	235	4.4	Coles et al. in. prep.
Moloka‘i, eight sites	1	5	6	196	3.1	" " " " "
Maui, nine sites	2	9	11	274	4.0	" " " " "
Midway Atoll	4	0	4	444	1.5	DeFelice et al. 1998
French Frigate Shoals	2	0	2	617	0.3	DeFelice et al. 2002
Johnston Atoll	5	5	10	668	1.5	Coles et al. 2001
Guam, island wide	41	44	85	2878	2.7	Paulay et al. 2002

the total biota in these two embayments. Although they do support corals and coral reefs, both Kāne‘ohe Bay and Waikīkī are highly disturbed environments with histories of marine species introductions and plentiful artificial surfaces. Kāne‘ohe Bay especially has many harbor characteristics such as low flushing rates, relatively high organic, nutrient, and turbidity content, and non-reef biotopes that may support a variety of introduced organisms. More typical coral reef environments supporting coral-dominated biota occurred at Kaho‘olawe Island, Midway, French Frigate Shoals and Johnston Atoll, where NIS were only a minor (0.3-1.5%) component of the total biota. All of these reef areas are remote from large harbors and are therefore presumably relatively isolated from major sources of marine introductions. Proximity to harbors or docking areas may be a major contributing factor in the occurrence of NIS on coral reefs determined on rapid assessment surveys underway in the main Hawaiian Islands (Coles et al. in prep). The overall values of 3-4% NIS shown in Table 7 for surveys completed on Kaua‘i, Moloka‘i and Maui are averages of values which ranged from as high as 8-9% on small reefs in the vicinity of Nawiliwili and Port Allen harbors on Kaua‘i to 0% on remote reefs off Moloka‘i and Maui, with most reefs that are distant from harbors showing NIS percentages of 1-3%, similar to the values found for reefs at American Samoa (Table 5) or around the island of Guam (Table 7).

V. MANAGEMENT CONSIDERATIONS

The results of this survey indicate that introduced marine species are a minor component of the total biota of Pago Pago Harbor and an even less frequently found and smaller percentages of the total biota in coral reef areas both in and outside of the harbor. Nonindigenous and cryptogenic species are mostly confined to the docking areas of the innermost harbor, where they are fewer in number and a smaller component of the total identified taxa than has been determined for harbors in Hawai‘i. None of the 28 nonindigenous or cryptogenic species found in this study have been reported to be invasive in other areas where they have been reported, and no native species appear to be threatened by these introductions. Therefore, no intervention or mitigation measures appear to be necessary or advisable at this time. However, managers should maintain vigilance concerning the prospect of new introductions or the possibility that cryptic introduced species already present in American Samoa may be favored by changes in environmental conditions that may promote their irreversible proliferation. Observations in Hawai‘i have indicated that it may require 10-20 years for an introduced organism to propagate to the point that it is considered invasive, as has occurred with the algae *Gracilaria salicornia* (Smith et al. 2002), the octocoral *Carijoa riisei* (Coles and Eldredge 2002a), and the barnacle *Chthamalus proteus* (Southward et al. 1998). Periodic rapid assessments and monitoring by trained observers should be undertaken to assure that introductions have not occurred or proliferated, in order to be able to plan and implement control measures in the early stages of an introduced organism’s increase and spread. As shown in the successful intervention against the bivalve mussel *Mytilopsis sallei* (Récluz) in Darwin, Australia harbors (Willan et al. 2000, Bax et al. 2002) eradication of an invasive introduced species is likely to be possible only if the introduction is caught in its early stages, indicating the need for periodic evaluation of existing conditions. Wherever possible, inspections of barges and other slow moving craft in transit from Pago Pago Harbor to other areas in American Samoa should also be undertaken to limit the

spread of organisms already established in the harbor. These preventative measures are the most feasible procedures to implement in order to maintain the present low levels of introduced marine species in the harbors and on the coral reefs of American Samoa.

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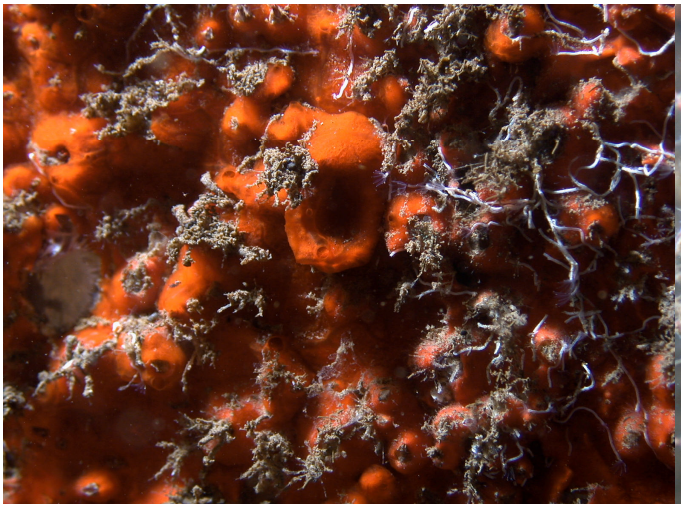
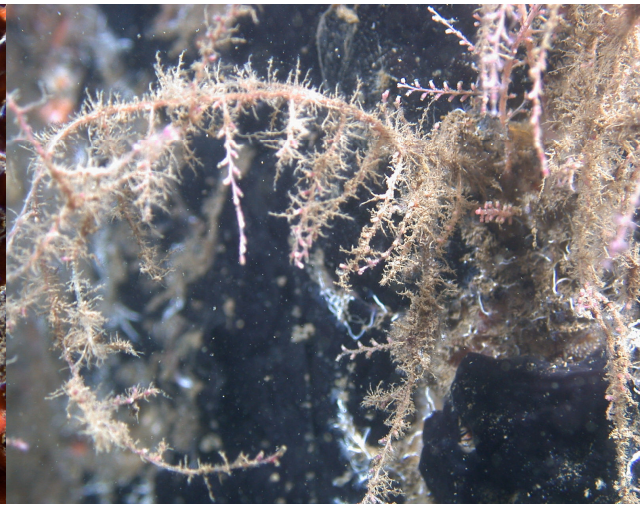
Crinoidea: Dr. Charles Messing, Nova Southeastern University

Ascidians: Mr. Scott Godwin, Bishop Museum

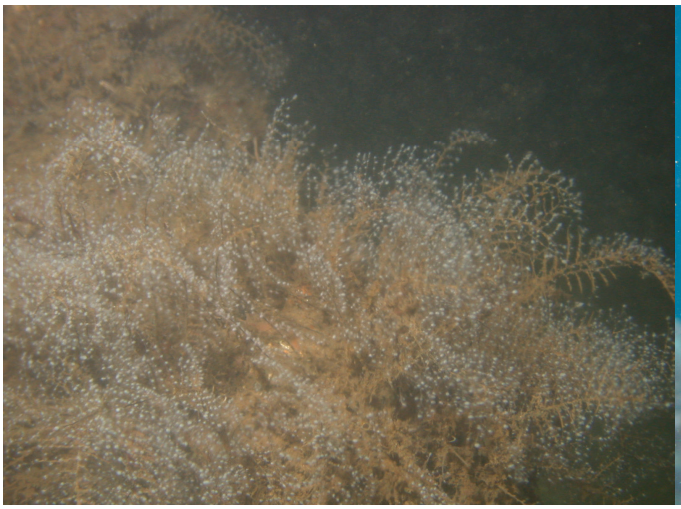
VIII. PLATES



A. *Mycale* sp. Sponge , Station 4, Main Dock



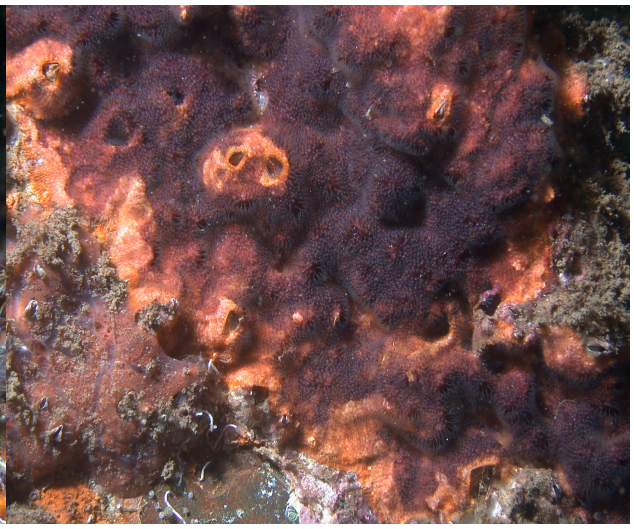
B. *Thyroscyphus fruticosus* hydroid, Station 4,



C. *Pennaria disticha* hydroid, Station 4 Main Dock

D. *Pennaria disticha* hydroid, Station 3, Utulei

E. *Salmacina dysteri*, Station 3, Utulei



F. *Schizoporella* cf. *errata*, Station 5, Dry Dock

APPENDIX A

ALGAE SURVEY REPORT

by

Posa A. Skelton

ALGAE SURVEY REPORT

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Introduction

This report was prepared for the Bernice P. Bishop Museum, as part of the introduced marine species survey in American Samoa conducted in October 2002. The report analyzes the results of algal surveys from ten sites on Tutuila Island, American Samoa, to determine their status as invasive species.

Algae are an important component of tropical reefs providing food for many organisms including humans, consolidating loose rubble, providing a niche for animals and plants, and complementing the array of colors that continues to entice visitors. They are also good environmental indicators especially when there is a change in the ecosystem such as increased nutrients or the absence of herbivores and grazers (Hatcher and Larkum 1983). One of the more serious threats to the marine environment is introduced invasive algae.

Invasive algae have been documented in most oceans and seas. In the Mediterranean approximately 61 species are considered introduced, 28 in the Atlantic coast of Europe, 21 in New Zealand, and about 20 in Southern Australia (Ribera and Boudouresque 1995). Negative ecological impacts are known for some invasive algal species, for example *Acanthophora spicifera, Avrainvillea amadelpha, Gracilaria salicornia* and *Hypnea musciformis* in Hawai‘i (Smith et al. 2002), *Undaria pinnatifida* in New Zealand and Australia (Hay and Luckens 1987, Hay 1990, Sanderson 1990), *Codium fragile* ssp. *tomentosoides* in North America (Carlton and Scanlon 1985), *Sargassum muticum* in Canada and Europe (Critchley et al. 1990), and *Caulerpa taxifolia* in the Mediterranean and South Australia (Meinesz and Hesse 1991). In the tropical seas introduced algae are poorly documented, except for the Hawaiian Islands. This may in part be attributed to the lack of expertise in the Pacific Island countries to accurately identify species and the low priority accorded to introduced species in the past. The smothering and subsequent weakening of the reef structure at Kān‘eohe Bay, Hawai‘i by the introduced *Kappaphycus striatum* (Smith et al. 2002) is of a grave concern as this alga (and other related *Kappaphycus* species) has been introduced to many Pacific Islands for cultivation (Skelton 1998).

The introduction of algae into a new place is either accidental, i.e. attached to ships hulls, equipment used in the aquatic environment, shells of cultured animals or ship's ballast, or deliberate for animal feed or aquaculture purposes (agar and carrageenan extraction).

The algal flora of American Samoa was first assessed by William Albert Setchell in the early 1920s (Setchell 1924), and 100 species were compiled. Setchell's collections were limited to shallow intertidal areas, with a few subtidal specimens obtained by dredging. No other major algal work is known from American Samoa since Setchell, but the efforts of algal collectors passing through the islands have yielded some new additions to the Samoan algal flora. The recent publication of the South Pacific Reef Plants by Littler and Littler (2003) illustrates 33 algal species from American Samoa. The Littlers' algal collections are housed at the Smithsonian Institution, Washington, D.C. The last two phycologists that visited the islands are Drs Paul Gabrielson and Peter Vroom, their collections are yet to be curated. American Samoan algae are also noted from reef ecologists' reports (Dahl 1971, Birkeland et al. 1987, Hunter et al. 1993, Wilkins in Birkeland et al. 1995). Moreover, American Samoa algae were included in the algal checklist of the Samoan Archipelago by Skelton and South (1999), where 198 taxa were listed. The checklist is currently being updated from past collections housed at the Bishop Museum and the University of California at Berkley Herbarium are examined,and field surveys, adding new records as well as new species to the flora. A total of 318 species have so far been documented (Skelton unpubl. data) for the Archipelago.

None of the previous Samoan studies address the issue of introduced algal species. However, they provide an excellent foundation whereby determination of the status of algal introductions can begin. With continuing monitoring of the coral reef ecosystem coupled with the knowledge gleaned and accumulated from past studies, managers should be able to determine the best course of action to safeguard the integrity of the marine environment of American Samoa. This report provides the first assessment of introduced marine algae for the Archipelago.

Materials and Methods

Surveys were carried out from 12-17 October 2002. Algae were collected by snorkeling or by using Scuba gear, wading or shore-collecting, often with the assistance of a diving knife. Smaller and fragile algae were collected together with the substratum they were growing on. Sampling focused systematic collecting in the intertidal and shallow subtidal, with supplementary sampling from reef slopes.

All specimens were treated with 4-percent formalin (10% formaldehyde) in seawater solution, and soaked in plastic bags or plastic vials for two days, before draining and repacking them for shipment.

Ten sites were surveyed (Table 1), although two smaller collections were made at Leone and Amalau.

Table 1. Details of collection sites and dates.

Station No.	Depth (m)	Date Collected	Locale	GPS	
				Lat.	Long.
1	3-24	14 Oct. 02	West Fagatele Bay	14°21.96'	170°45.85'
2	5-26	14 Oct. 02	East Fagatele Bay	14°21.95'	170°45.77'
3	+0.5-18	13 Oct. 02	Utulei, Pago Pago Hbr	14°17.02'	170°40.67'
4	+0.5-8	15 Oct. 02	Main Dock, Pago Pago Hbr	14°16.59'	170°41.26'
5	2-14	15 Oct. 02	Dry Dock, Pago Pago Hbr	14°16.32'	170°41.54'
6	0-24	17 Oct. 02	Onesosopo, Pago Pago Hbr	14°17.18'	170°39.89'
7	2-23	17 Oct. 02	Aūa, Pago Pago Hbr	14°16.70'	170°40.16'
8	2-22	17 Oct. 02	Leloaloa, Pago Pago Hbr	14°16.22'	170°40.61'
8	4-28	16 Oct. 02	Vatia Bay, National e Park	14°14.79'	170°40.10'
10	4-21	16 Oct. 02	Fagasā Bay, National Park	14°17.01'	170°43.36'

Standard phycological methods were followed (see Tsuda and Abbott 1985). Macroalgae (large seaweeds of size 5 cm or more) were identified and pressed in a standard plant press, and if necessary, parts of the plant were removed for microscopicanatomical assessment to confirm the species identification. Macro-algal epiphytes were removed and identified. Algae smaller than 5 cm were identified using a Nikon SMZ645 dissecting microscope and an Olympus CX31 compound microscope. Smaller specimens were mounted on slides in a 50% Karo solution (corn syrup in water with a few thymol crystals). Photographs were taken of some of the algae using a Nikon Coolpix 990 digital camera.

Each specimen analyzed was designated a field number, which was entered into a log-book. The field number began with the letters AS (for American Samoa) followed by a consecutive number. These were later entered into a Microsoft Excel Sheet for further documentation and analysis.

Voucher specimens are deposited in the Herbarium Pacificum of the Bishop Museum (Honolulu), with some duplicate specimens at the South Pacific Regional Herbarium at the Marine Studies Programme, University of the South Pacific, Fiji.

Results

A total of 313 specimens were analyzed comprising 139 taxa: 33 Chlorophyta, 9 Phaeophyta, 84 Rhodophyta and 13 Cyanophyta.

Station Location and Site Description

Stations 1 and 2: West and East Fagatele Bay (14° 21.96'S, 170°45.85')

Stations 1 and 2 are located within the Fagatele Bay National Marine Sanctuary, which is a moderately exposed bay with relatively steep cliffs and an undulating coastline. A few pockets of flat intertidal areas exist joining the steep cliffs to a gradual sloping fringing reef. The two stations are treated here as one algal ecological habitat due to the continuous fringing reef and their close proximity to each other. The stations were dominated by articulate and non-articulate or crustose coralline algae, as well as small turf algal communities. A buoy is located in the middle of the Bay, and algae attached to it were collected. Algae were also collected from the intertidal area as well as the splash zone. The two sites are not considered high risk sites from introduced species.

Station 3: Utulei Pago Pago Harbor (S14°17.04', W170°40.62')

The reef flat was surveyed from the shoreline toward the fringing reef crest. Subtidal sites were surveyed by the team. The reef flat frequently has pockets of deeper (3-5 m depth) sandy pits, which were barren at most parts or dominated by soft corals. Debris, rubbish and other structures littered parts of the sandy pits. Digital photos were taken of the site as well as some specimens collected. The current flow and the fact that the site is nearer to the harbor entrance may be a reason why algal communities seem more abundant there. Small red algal turfs (*Gelidiella repens*, *Gelidium* spp.) were common in crevices and on the undersides of limestone rocks and volcanic rocks strewn throughout the site. A few green macro-algae were obvious (*Valonia fastigiata, Dictyosphaeria versluysii, Bryopsis pennata* and *Halimeda gracilis*). *Hypnea pannosa* was found abundant between coral colonies. Two main habitats were distinguished: (i) the shallow reef flat and (ii) deeper sandy pits. Collections were also made from the sea-wall, which consisted mainly of small algal fuzz. This site is considered a high risk to introduced species due to its location.

Station 4 and 5: Main (14°16.59, 170°41.26') and Dry (14°16.32', 170°39.89') Docks, respectively - Pago Pago Harbor

Agal samples were collected from hulls of vessels and pilings at Stations 4 and 5. Station 4 (Main Dock) samples were scraped off the hull of an out-of-use landing craft with *Oregon, USA* written on the side. Minute turf algae were collected at the water-line, and one of the anchor ropes had a small clump of a black-colored alga (*Grateloupia filicina*), mimicking a feather-star. This was collected, with a few plants preserved in alcohol and the rest in formalin solution. The metal and

concrete wharf pilings were also sampled. Station 5 (Drydock), samples were scraped off the hull of the *Lien Fan Noi* fishing vessel. The scuba diving team collected algae from the shallow subtidal. Both sites are at high risk for receiving non-native organisms.

Station 6. Onesosopo, Pago Pago Harbor (14°17.18', 170°39.89')

This site is located on the opposite side from Utulei, on the east side of the harbor. A short fringing reef <100 m wide extends seaward before a gradual slope in some parts, whereas vertical walls are common in other parts. The intertidal area was surveyed including the splash-zone near Breaker Point. Some subtidal algal collections were made by the team. Onesosopo is a relatively high risk site for introduced species.

Station 7. Aūa, Pago Pago Harbor (14°16.70', 170°40.16').

The Aūa site is on the same side of the harbor as Onesosopo. The fringing reefs are very much like Onesosopo, extending seaward for approximately 100 meters. Some patch reefs are found at this site. Like the previous site, this is considered a high risk site for introduced species.

Station 8. Leloaloa Pago Pago Harbor (14°16.22', 170°40.61')

Only subtidal sites were surveyed. The reef contour follows a similar pattern to that of Onesosopo and Aūa reefs. This is a high risk site for receiving introduced species.

Station 9. Vatia Bay, National Park of American Samoa (14°14.79', 170°40.10')

One of the most beautiful places on the island, this predominantly subtidal area is fairly inaccessible because of the direct pounding of the waves along the coast. The dominant algal groups were the corallines. The use of scuba equipment is needed for thorough surveying at this site. Very limited collections were possible along the coast. Some algal specimens were collected by the team from subtidal sites. A small but important collection was made at Amalau Bay, the launching site for the boat. The large volcanic rocks were surveyed and some hardy algal specimens were collected, e.g. *Gelidiella acerosa* and *Sargassum anapense.* This remote site is not considered at high risk of receiving introduced species.

Station 10. Fagasā Bay, National Park of American Samoa (14°17.01', 170°43.36')

This site is rivaled by Vatia Bay as one of the most picturesque sites of Tutuila. From an algal perspective this site was very interesting. The diversity of fleshy macro-algae collected from this site was higher than at any other sites in the survey. The fringing reefs and slope as well as many crevices and grooves provided diverse habitats, which were occupied by different algae. As at other sites, articulate and non-articulate coralline algae were the dominant group. Some fleshy algae were seen for the first time including *Turbinaria ornata* and *Chrysymenia kaernbachii*. This is a low risk site from introduced species.

Algal Results By Station

Stations 1 and 2. (Fagatele Bay National Marine Sanctuary)
A total of 47 taxa were found at Fagatele Bay, consisting of 3 Cyanophyta, 11 Chlorophyta, 5 Phaeophyta, and 28 Rhodophyta. One new addition to the Tutuila Island flora is *Derbesia marina*. This alga is not considered invasive as its distribution is widespread from tropical to cold-water areas.

Station 3. (Utulei)
Fifty six algae were found, consisting of 5 Cyanophyta, 17 Chlorophyta, 5 Phaeophyta, and 29 Rhodophyta. Of all the Pago Pago Harbor sites this is by far the most biologically diverse from an algal perspective. Three new records for Tutuila Island were found (*Acetabularia exigua, Codium mammilosum,* and *Hypoglossum anomalum*). All of these algae have been recorded from neighboring Western Samoa and Fiji.

Stations 4 and 5 (Docks)
Only 9 species were collected from the two Docks comprising 1 Cyanophyta, 3 Chlorophyta, and 5 Rhodophyta. No Phaeophyta were found.

Station 6 (Onesosopo)
A total of 33 algae were recorded: 3 Cyanophyta, 8 Chlorophyta, and 23 Rhodophyta. No Phaeophyta were found.

Station 7 (Aūa);
Thirty-four taxa were enumerated, comprising 4 Cyanophyta, 8 Chlorophyta, 1 Phaeophyta, and 21 Rhodophyta.

Station 8 (Leloaloa)
Only 13 taxa were found, comprised of 3 Chlorophyta, and 10 Rhodophyta. No cyanophytes or phaeophytes were collected, which may reflect both the limited collections made and the season.

Station 9 (Vatia Bay)
A total of 31 taxa were recorded, comprised of 3 Cyanophyta, 5 Chlorophyta, 4 Phaeophyta, and 19 Rhodophyta. The most unusual find from this site was the collection of a small green alga – *Sporocladopsis erythraea*. This little-known alga was first recorded from the Red Sea. Its troubled taxonomic history is attributed to Papenfuss (1962) who erroneously synonymized it with *Pilinia* (a phaeophyte). This alga was found epiphytic on the discoid holdfast of the endemic *Sargassum anapense*. This is the first record of this alga from the Pacific Ocean, but it may well be more common than is currently believed. It may often be overlooked during surveys due to its minute size and cryptic habit.

Station 10 (Fagasa)
Forty-two taxa were recorded, comprising 4 Cyanophyta, 6 Chlorophyta, 4 Phaeophyta, and 28 Rhodophyta. One new addition to the Samoan flora is *Chrysymenia kaernbachii* a species with its type locality from Papua New Guinea and which has recently been found in Fiji and neighboring Western Samoa.

Comparison with Previous Surveys

Of the 318 algae previously recorded in the Samoan Archipelago, 262 are now known for American Samoa. Our surveys found 65 new records for American Samoa (of which approximately 10 are new records for the Archipelago's flora).

Setchell (1924) in his treatment of algae from American Samoa compiled 100 species consisting of 13 Cyanophyta, 47 Rhodophyta, 11 Phaeophyta, and 29 Chlorophyta. Setchell, with assistance from three able collectors (Alfred G. Mayor, A. L. Treadwell, and F.A. Potts), collected from 15 different sites around the island of Tutuila plus nearby islets (Aunu'u and Goat). One of the sites that received much attention during Setchell's surveys was Aūa Reef, including Breaker Point. From this site alone, he compiled 51 species of which four he described as new to science. The present survey yielded 34 taxa from the Aūa Reef site, of which eight were found to be new additions to Setchell's (1924) list. The eight new additions have a pan-tropical distribution and most have been recorded from Western Samoa and as far east as French Polynesia.

Setchell made a few collections from Fagasā (9 species) and Utulei (4 species – as Utelei), but no collections were made from Vatia, Onesosopo, Leloaloa or Fagatele. Approximately 12 algal taxa were collected by Richard Buggeln and Roy Tsuda from Vatia Bay and Fagasā Bay in 1964 (these are housed at Bishop Museum). Their collections need to be examined, although their tentative identifications include species with a pan-tropical to subtropical distribution.

The Fagatele Bay National Marine Sanctuary has been studied over the last fifteen years (Birkeland et al., 1987, 1995) and is considered one of the best monitored marine areas in the Archipelago. In these surveys Birkeland et al. (1987, 1995) found a very high algal cover (> 75%), comparable to the estimation made during our surveys. The number of algal species reported was 39 species in 1987 and 26 in 1995. By comparison, 47 were species found during our surveys. This slight increase in species number is attributed primarily on the different habitats that were sampled during our surveys, which include the upper intertidal and the spray-zone, habitats not sampled by Birkeland et al..

Nonindigenous and Cryptogenic Species

As previously stated all of the species identified in our surveys have distributions that are either pan-tropical or limited to the Indo-Pacific region. It is important to note that some marine plant species have spread to as far east as American Samoa and no further. For example American

Samoa is the easternmost limit for the natural spread of mangroves. Seagrasses (*Halophila ovalis* and *Syringodium isoetifolium*) find their easternmost limit here, being absent from the Cook Islands and then reappearing with a different species (*Halophila decipens*) in French Polynesia. This may indicate that the distribution of some marine plants is still continuing eastward. It is likely that some of the algae recorded in our surveys could have recently arrived from neighboring countries, particularly Western Samoa. Two species that could be considered in this category are *Caulerpa serrulata* and *Halymenia durvillei*. These two species are abundant at the Apia Harbor and were common in Utulei. It is interesting to note that these two algae have an Indo-Pacific distribution but had not been recorded from American Samoa by Setchell, despite the fact that both species are fairly large. Another species of interest is *Codium mamillosum*. Although only a juvenile specimen was collected, it is noted that *Codium* species are notorious as invasives. *Codium arenicola* is a species found in Southeast Asia but it appears to have spread as far east as Apia Harbor,including Suva Harbor, Fiji (pers. Observ., PAS). This alga has yet to be found in Pago Pago Harbor, although with frequent vessel traffic between Apia Harbor and Pago Pago, it may find its way here. Another *Codium* species that is of concern worldwide is *Codium fragilis* ssp. *tomentosoides,* with an Atlantic origin and has spread to North America, the Mediterranean and New Zealand. *Grateloupia filicina,* an alga with its type locality from Italy, was collected from the main Dock. It would be tempting to label this alga as an invasive species but it has been recorded from Hawai'i (Abbott 1999) and French Polynesia (Payri and N'Yeurt 1997).

There is one reported alga that has a disjunct distribution: *Sporocladopsis erythraea*. This minute green alga was recorded from the Red Sea by Nasr (1944). There are only two *Sporocladopsis* species known with the second species (*Sporocaldopsis novae-zealandiae*) found in New Zealand and Australia (Millar and Kraft 1994). The occurrence of this alga in our collections was a surprise find on the base of a *Sargassum anapense,* which is an brown alga endemic to Samoa. We consider the presence of *Sporocladopsis erythraea* as native, and it may well be more common than currently reported, but its small size and cryptic habitat may contribute to its being usually overlooked.

Discussion

The algal diversity in the tropical Pacific Ocean to some extent generally follows the pattern seen in other tropical marine organisms (e.g. corals, fishes, gastropods, etc.), with the highest diversity found in the Indo-Malay region. Algae, unlike other tropical marine organisms have their highest species diversity in a few widely dispersed areas ranging from temperate (South Australia), sub-tropical (southern Japan) to tropical (Philippines) (Bolton 1994). All of these places contain over 800 species, and their floras continue to receive much attention. By contrast, the Pacific Islands have had relatively little scientific study of their marine flora. Of the few better known places [Hawai'i (400 spp.), Fiji (500 spp.), French Polynesia, and Samoa (both with over 300 spp.)] many areas and reefs remain to be surveyed. These surveys are important as they provide the baseline information needed when discussing introduced marine species.

Fortunately for American Samoa, the algal inventory began in the early 1920s. Although, the flora of the neighboring islands of Western Samoa began much earlier with an inventory carried out by Grunow (1874) followed by Reinbold (1896). It is important to note that the marine flora of the two countries are very similar and therefore should be considered as one (except for the remote Swains and Rose Atolls, part of American Samoa). The updated algal list for the Archipelago, compiled by Skelton and South (1999, 2002) provides a checklist against which possible recent introductions may be determined. We must be cautious as we acknowledge that many cryptic species and species found only in deeper waters were probably missed by earlier collectors, and careful analyses need to be made to determine their introduced status. For example, the red alga *Chrysymenia kainbachii* was first described from Papua New Guinea, and was collected in our surveys from the Fagasā site. This alga has not been listed in previous algal compilations from the Archipelago and it could easily be considered as an introduced species. However, this alga has been recorded from Fiji and as far north as Hawai'i. Moreover, the site where it was collected (Fagasā) is fairly remote from any potential source of introductions such as ports and harbors. It is therefore unlikely to be an introduced species.

Utulei was found to be the most diverse site with 56 species recorded. Of these, 16 species were new additions to Setchell's list. Fagatele and Fagasā with 47 and 42 species, respectively, were the next most diverse sites. The numbers of new additions from these two sites were 16 species for Fagatele and 15 for Fagasā. The majority of the new additions consist of minute epiphytic algae such as *Herposiphonia secunda, Griffithsia subcylindrica, Dictyopteris repens* and *Hypoglossum anomalum*. Some larger seaweeds are also found in our surveys include *Halymenia durvillei* (*ca.* 20 cm tall), *Caulerpa serrulata* (5 to >10 cm tall) and *Galaxaura filamentosa* (5 cm). *Halymenia durvillei* is an edible seaweed in Samoa (known locally as *Limu mumu* or *Limu aau*). There has been an increased abundance of this seaweed in Apia Harbor, Western Samoa (pers. observ.). *Caulerpa serrulata* is also abundant in the Apia Harbor, especially near the break-wall by the Matautu Wharf (PAS, pers. observ.). Both of these algae were collected from Utulei near the harbor entrance. It is reasonable to assume that the two algae have been introduced into Pago Pago Harbor from Apia Harbor. However, more studies including molecular work, need to be undertaken to confirm this. *Galaxaura filamentosa* is a red alga that is often covered in fine silt, thus it could have been easily overlooked. It was collected from all of the sites except the docks, thus it is considered part of the native flora.

Of the six sites that are considered vulnerable to introduced species (Aūa, Docks 1 and 2, Leloaloa, Onesosopo and Utulei), the algal flora was found to be very similar to those from other less vulnerable sites. Only one alga *Grateloupia filicina* was found to be an anomaly in the flora, although it has been reported from Fiji (South and Skelton 2003, in prep.), Hawai'i (Abbott 1999) and French Polynesia (Payri and N'Yeurt 1997). This alga could be considered a recent introduction as it was only found at the main dock attached to a rope that was anchoring a landing craft. This is the first record of this species from the Archipelago.

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APPENDIX B

List of Marine Organisms Reported by the Present and Previous Studies or in Bishop Museum Collections from Pago Pago Harbor, Fagatele Bay, Vatia Bay, and Fagasā Bay.

PLANTA

Phylum CYANOPHYTA

Family CHAMAESIPHONACEAE

***Hyella caespitosa* Bornet & Flahault**
1920 Setchell, 1924 Aūa

Family NOSTOCACEAE

***Anabaena* sp.**
2002 present study

Family OSCILLATORIACEAE

***Lyngbya confervoides* C. Agardh**
2002 present study

***Lyngbya majuscula* (Dillwyn) Harvey**
1920 Setchell, 1924 Aūa
2002 present study

***Lyngbya semiplena* (C. Agardh) J. Agardh**
2002 present study

***Lyngbya* sp.**
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
2002 present study

***Microcoleus lynbyaceus* (Kutz.) Crouan**
1985 Birkeland et al. 1987 Fagatele Bay

***Oscillatoria* cf. *bonnemasonii* (Crouan & Crouan) Crouan & Crouan**
2002 present study

***Oscillatoria* sp.**
2002 present study

***Schizothrix calicola* (Ag.) Gomont**
1985 Birkeland et al. 1987 Rainmaker Hotel

***Symploca hydnoides* Kütz. ex Gomon**
1920 Setchell, 1924 Aūa
1920 Setchell 1924 Fagatele Bay

***Symploca muscorum* (Ag.) Gomont**
1920 Setchell, 1924 Aūa

Family PHORMIDIACEAE

***Phormidium* cf. *laysanense* Lemmermann**
2002 present study

***Phormidium penicilliatum* Gomont**
2002 present study

***Phormidium* sp.**
2002 present study

***Phormidium submembranaceum* (Ardissone & Strafforello) Gomont**
2002 present study

Family SCHIZOTHRICHACEAE

***Schizothrix calicola* (Ag.) Gomont**
1985 Birkeland et al. 1987 Fagatele Bay

***Schizothrix mexicana* Gomont**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Schizothrix* sp.**
2002 present study

Family SCYTOMENATACEAE

***Microchaete vitiensis* (Askenasy) de Toni**
1920 Setchell, 1924 Aūa

***Scytonema figuratum* var. *samoense* Hieronymus**
1920 Setchell, 1924 Fagatogo

***Scytonema hofmanni* Agardh**
1920 Setchell, 1924 Pago Pago village

***Scytonema stuposum* Kütz. (Bornet)**
1920 Setchell, 1924 Aūa, Pago Pago Harbour

Family STIGONEMATACEAE

***Mastigocoleus testarum* Lagerheim, 1886**

1920 Setchell, 1924 Aūa

Phylum CHLOROPHYTA

Family BRYOPSIDACEAE

***Bryopsis pennata* Lamouroux**

1990 Sea Engineering/AECOS 1991 Atuʻu-Leasi Pt.

2002 present study

***Bryopsis pennata* var. *secunda* Lamouroux**

1920 Setchell 1924 Fagatele Bay

1920 Setchell, 1924 Aūa

***Bryopsis plumosa* (Huds.) Agardh**

1990 Sea Engineering/AECOS 1991 Atuʻu-Leasi Pt.

***Bryopsis pottsii* Setchell**

1920 Setchell, 1924 Pago Pago Harbor

***Bryopsis* sp.**

1979 USACE 1980 Fagatele Bay

Family BRYOPSIDALES

***Chlorodesmis* sp.**

1974 Randall & Devaney 1974 Vatia Bay

Halimeda gracilis

1974 Randall & Devaney 1974 Vatia Bay

Family CAULERPACEAE

***Caulerpa* cf. *sertularioides* (Gmel.) Howe**

1990 Sea Engineering/AECOS 1991 Atuʻu-Leasi Pt.

***Caulerpa peltata* Lamouroux**

1920 Setchell, 1924 Aūa

2002 present study

***Caulerpa racemosa* (Lamouroux) Eubank**

1920 Setchell, 1924 Pago Pago Harbor, Aūa

***Caulerpa racemosa* v. peltata (Lamouroux) Eubank**

2002 present study

***Caulerpa racemosa* var. *clavifera* (Turner) Weber Bosse**

1920 BPBM-542706 Aūa

***Caulerpa racemosa* var. *peltata* (J.V.Lamour.) Eubank**

1920 BPBM-542072 Aūa

***Caulerpa serrulata* (Forsskål) J. Agardh** **Cryptogenic**

2002 present study

***Caulerpa* sp.**

1985 Sea Engineering 1986 Rainmaker Hotel

***Caulerpella ambigua* (Okamura) Prud'homme & Lokhorst**

2002 present study

Family CHROOLEPIDACEAE

***Sporocladopsis erythraea* Nasr**

2002 present study

Family CLODOPHORACEAE

***Boodlea montagnei* (Harvey ex J. Gray) Egerod**

2002 present study

***Boodlea vanbosseae* Reinbold**

1920 Setchell, 1924 Aūa

2002 present study

***Chaetomorpha antennina* (Bory) Kützing**

1920 Setchell, 1924 Aūa

***Chaetomorpha restricta* (Suhr) Kützing**

1920 Setchell, 1924 Aūa

***Cladophora* cf. *limicola* Setchell**

2002 present study

***Cladophora pinniger* Setchell**

1920 Setchell, 1924 Pago Pago Harbor

***Cladophora* sp.**

1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
2002 present study

***Dictyosphaeria* sp.**

1974 Randall & Devaney 1974 Vatia Bay

***Dictyosphaeria versluysii* Weber-van Bosse**

1920 Setchell 1924 Aūa
2002 present study

***Rhizoclonium africanum* Kützing**

2002 present study

***Rhizoclonium samoense* Setchell**

1920 Setchell, 1924 Aūa
1920 Setchell 1924 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay

Family CODIACEAE

***Codium bulbopilum* Setchell**

1920 Setchell, 1924 Aūa

***Codium* cf. *mamillosum* Harvey**

2002 present study

Family DASYCLADIACEAE

***Neomeris annulata* Dickie, 1874**

1920 Setchell, 1924 Aūa
1985 Birkeland et al. 1987 Fagasā Bay

Family DERBESIACEAE

***Derbesia marina* (Lyngbye) Solier**

2002 present study

Family HALIMEDACEAE

***Halimeda discoidea* Decaisne**

1979 USACE 1980 Utulei
1979 USACE 1980 Fagasā Bay
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay

***Halimeda gracilis* Harvey ex J. Agardh**

2002 present study

***Halimeda incrassata* (Ellis & Solander) Lamouroux**

1920 Setchell, 1924 Aūa
1920 Setchell 1924 Fagatele Bay
2002 present study

***Halimeda minima* (W.R. Taylor) Colinvaux**

2002 present study

***Halimeda opuntia* (Linnaeus) Lamouroux**

1920 Setchell 1924 Fagatele Bay
1920 Setchell, 1924 Pago Pago Harbor, Aūa
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
2002 present study

***Halimeda* sp.**

1979 USACE 1980 Vatia Bay
1979 USACE 1980 Aūa
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
2002 present study

Family POLYPHYSACEAE

***Acetabularia exigua* Solms-Laubach**

2002 present study

***Acetabularia parvula* Solms-Laubach**

2002 present study

Family RHODOMELACEAE

***Chondria* cf. *polyrhiza* Collins & Hervey**
2002 present study

***Chondria minutula* Weber-van Bosse**
2002 present study

***Chondria simpliciuscula* Weber-van Bosse**
2002 present study

***Chondria* sp.**
2002 present study

***Chondroaphycus succiscus* (Cribb) Nam**
2002 present study

Family SIPHONOCLADACEAE

***Cladophoropsis carolinensis* Trono**
2002 present study

***Cladophoropsis herpestica* (Montagne) Howe**
2002 present study

***Cladophoropsis limicola* Setchell**
1920 Setchell, 1924 Aūa

***Cladophoropsis* sp.**
2002 present study

***Dictyosphaeria* cf. *cavernosa* (Forsskål) Børgesen**
2002 present study

***Dictyosphaeria versluysii* Weber-van Bosse**
1985 Sea Engineering 1986 Rainmaker Hotel

***Ventricaria ventricosa* (J. Agardh) Olsen & J. West**
1920 Setchell 1924 Fagatele Bay
1920 Setchell, 1924 Aūa
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

Family UDOTEACEAE

***Chlorodesmis fastigiata* (C.Agardh) Ducker**
1920 Setchell 1924 Fagatele Bay
1920 Setchell, 1924 Aūa
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
2002 present study

Family ULVACEAE

***Enteromorpha* ?cf. *intestinalis* (Linnaeus) Nees**
2002 present study

***Enteromorpha clathrata* (Roth) J.Agardh**
1920 BPBM-545891 Pago Pago Harbor
1920 Setchell 1924 Fagatele Bay
1920 Setchell, 1924 Pago Pago Harbor
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Enteromorpha compressa* (Linnaeus) Nees**
2002 present study

***Enteromorpha flexuosa* (Wulfen) J. Agardh**
1920 Setchell, 1924 Pago Pago Harbor

***Enteromorpha intestinalis* (Linnaeus) Link**
1920 Setchell, 1924 Pago Pago Harbor

***Enteromorpha* sp.**
2002 present study

Family VALONIACEAE

***Dictyosphaeria versluysii* Weber Bosse**
1985 Birkeland et al. 1987 Fagatele Bay

***Valonia* cf. *aegagropila* C. Agardh**
2002 present study

***Valonia fastigiata* Harvey ex J. Agardh**

1920 Setchell 1924 Fagatele Bay
1920 Setchell, 1924 Aūa
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

Phylum PHAEOPHYTA

Family CHNOOSPORACEAE

***Chnoospora implexa* J. Agardh**

2002 present study

Family DICTYOTACEAE

***Dictyopteris repens* (Okamura) Børgesen**

1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Dictyota bartayresiana* Lamouroux**

2002 present study

***Dictyota friabilis* Setch.**

1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Dictyota* sp.**

1985 Sea Engineering 1986 Rainmaker Hotel

***Dictyota* sp. (*lata*?)**

1920 Setchell, 1924 Pago Pago Harbor

***Lobophora variegata* (Lam.) Womersley ex Oliveira**

2002 present study

***Ralfsia* sp.**

1979 USACE 1980 Vatia Bay
1979 USACE 1980 Fagasā Bay
1979 USACE 1980 Utulei

Family ECTOCARPACEAE

***Ectocarpus van-bosseae* Setchell & Gardiner**

1920 Setchell, 1924 Pago Pago Harbor

***Feldmania indica* (Sonder) Womersley & Bailey**

1920 Setchell, 1924 Pago Pago Harbor

***Feldmannia indica* (Sonder) Womersley & Bailey**

2002 present study

***Hincksia breviarticulata* (J. Agardh) P. Silva**

1920 Setchell, 1924 Pago Pago Harbor
2002 present study

Family RALFSIACEAE

***Hapalospongidion pangoense* (Setchell)**

1920 Setchell 1924 Fagatele Bay
1920 Setchell, 1924 Pago Pago Wharf, Aūa
1985 Birkeland et al. 1987 Fagasā Bay

***Mesospora pangoensis* (Setch.) Chihara & J.Tanaka**

1985 Birkeland et al. 1987 Fagatele Bay

Family SARGASSEACEAE

***Sargassum anapense* Setchell et Gardner**

2002 present study

***Sargassum* sp.**

1964 BPBM-508965 Vatia Bay

***Turbinaria ornata* (Turner) J. Agardh**

1920 Setchell, 1924 Aūa
2002 present study

Family SPHACELARIACEAE

***Sphacelaria cornuta* Sauvageau**

1920 Setchell, 1924 Aūa

***Sphacelaria tribuloides* Menegh.**

1985 Birkeland et al. 1987 Fagatele Bay

Phylum RHODOPHYTA

Family BONNEMAISONIACEAE

Asparagopsis taxiformis **(Delile) Trevisan**

2002 present study

Family CAULICANTHACEAE

Caulacanthus ustulatus **(Turner) Kützing**

2002 present study

Family CERAMIACEAE

Aglaothamnion **sp.**

2002 present study

Anotrichium tenue **(C.Agardh) Naegeli**

1920 Setchell, 1924 Aūa

Antithamnion decipiens **(J. Agardh) Athanasiadis**

2002 present study

Antithamnionella breviramosa **(Dawson) Wollaston**

2002 present study

Antithamnionella **sp.**

2002 present study

Balliela repens **Huismann & Kraft**

2002 present study

Centroceras clavulatum **(C. Agardh) Montagne**

1920 Setchell, 1924 Aūa

2002 present study

Ceramium affine **Setchell & Gardner**

2002 present study

Ceramium borneense **Weber-van Bosse**

2002 present study

Ceramium **cf.** ***marshallense*** **Dawson**

2002 present study

Ceramium flaccidum **(Kützing) Ardissone**

1920 Setchell, 1924 Pago Pago Harbor;

2002 present study

Ceramium krameri **South & Skelton**

2002 present study

Ceramium macilentum **J. Agardh**

2002 present study

Ceramium mazatlenese **Dawson**

1985 Birkeland et al. 1987 Fagatele Bay

1985 Birkeland et al. 1987 Fagasā Bay

Ceramium **sp.**

1985 Birkeland et al. 1987 Fagatele Bay

2002 present study

Champia parvula **(C. Agardh) Harvey**

2002 present study

Champia viellardii **Kützing**

2002 present study

Cheilosporum acutilobum **Kützing**

1920 Setchell, 1924 Aūa & Breaker Point

2002 present study

NA BPBM-508980 Vatia Bay

Cheilosporum maximum **Yendo**

1985 Birkeland et al. 1987 Fagatele Bay

1985 Birkeland et al. 1987 Fagasā Bay

Cheilosporum multifidum **(Kützing) Yendo**

1985 Birkeland et al. 1987 Fagatele Bay

Cheilosporum **sp.**

1979 USACE 1980 Fagatele Bay

***Cheilosporum spectabile* (Decaisne) Piccone**

1920 Setchell 1924 Fagatele Bay
1920 Setchell 1924 Fagasā Bay
1920 Setchell, 1924 Aūa
1974 BPBM-528511 Vatia Bay
2002 present study
NA BPBM-508995 Vatia Bay

***Crouania attenuata* (C. Agardh) J. Agardh**

2002 present study

***Griffithsia* sp.**

2002 present study

***Griffithsia subcylindrica* Okamura**

2002 present study

***Haloplegma duperreyi* Montagne**

1985 Birkeland et al. 1987 Fagasā Bay
2002 present study

***Spyridia filamentosa* (Wuflen) Harvey**

1920 Setchell, 1924 Pago Pago Harbor

***Wrangelia argus* (Montagne) Montagne**

2002 present study

Family CHAMPIACEAE

***Champia compressa* Harv. J. Agardh**

1985 Birkeland et al. 1987 Fagatele Bay

Family CORALLINACEAE

***Amphiroa anceps* (Lamarck) Decaisne**

1920 Setchell, 1924 Aūa
1920 Setchell 1924 Fagatele Bay

***Amphiroa foliacea* Lamouroux**

1920 Setchell 1924 Fagatele Bay
1920 Setchell, 1924 Aūa, Utulei
1964 BPBM-508982 Vatia Bay
1964 BPBM-508993 Fagasā Bay
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Amphiroa fragillisima* (Linnaeus) Lamouraux**

1920 Setchell 1924 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay

***Amphiroa* sp.**

1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Leloaloa
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Cheilosporum maximum* Yendo**

1985 Birkeland et al. 1987 Rainmaker Hotel

***Cheilosporum* sp.**

1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay

***Choreonema thuretti* (Bornet) Schmitz**

2002 present study

***Chrysemnia kaernbachii* Grunow**

2002 present study

***Coralline* sp.**

2002 present study

***Hydrolithon onkodes* (Heydrich) Penrose & Woelkerling**

1920 Setchell 1924 Fagasā Bay
1920 Setchell, 1924 Aūa
1920 Setchell 1924 Fagatele Bay
2002 present study

***Hydrolithon reinboldii* (Weber-van Bosse & Foslie 1901) Foslie**
1920 Setchell 1924 Fagatele Bay
1920 Setchell, 1924 Aūa
***Hydrolithon* sp.**
2002 present study
***Jania adhaerens* Lamouroux**
1920 Setchell, 1924 Aūa, Pago Pago Harbor
***Jania capillacea* Harvey**
1985 Birkeland et al. 1987 Fagatele Bay
***Jania* cf. *adhaerens* Lamouroux**
2002 present study
***Jania* cf. *pumila* Lamouroux**
2002 present study
***Jania* sp.**
1964 BPBM-508994 Fagasā Bay
2002 present study
***Lithophyllum kotschyanum* Unger**
1920 Setchell, 1924 Aūa
1920 Setchell 1924 Fagatele Bay
2002 present study
***Lithophyllum moluccense* Foslie**
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
***Lithophyllum pygmaeum* (Heydrich) Heydrich**
1920 Setchell 1924 Fagatele Bay
2002 present study
***Lithoporella melobesioides* Foslie**
1920 Setchell, 1924 Aūa
***Lithoporella* sp.**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
***Lithothamion proliferum* Foslie**
2002 present study
***Mastophora pacifica* (Heydrich) Foslie**
2002 present study
***Mesophyllum erubesence* (Foslie) Lemoine**
1985 Birkeland et al. 1987 Fagatele Bay
***Mesophyllum mesomorphum* (Foslie) Adey**
1985 Birkeland et al. 1987 Fagatele Bay
***Mesophyllum simulans* (Foslie) Lemoines**
1920 Setchell, 1924 Aūa
***Mesophyllum* sp.**
2002 present study
***Neogoniolithin* sp.**
1985 Birkeland et al. 1987 Fagatele Bay
***Neogoniolithon brassica-florida* (Harvey) Setchell & Mason**
1920 Setchell, 1924 Aūa
Neogoniolithon* cf *clavacymosum
2002 present study
***Neogoniolithon* sp.**
2002 present study
***Porolithon* sp.**
1979 USACE 1980 Utulei
1979 USACE 1980 Fagasā Bay
1979 USACE 1980 Aūa
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
***Sporolithon erythraeum* (Rothpletz) Kylin**
1920 Setchell, 1924 Utulei; Fagatogo; Aūa

Family DASYACEAE

Dasya anastomosans **(Weber-van Bosse) Wynne**

2002 present study

Heterosiphonia crispella **(Børgesen) Wynne**

2002 present study

Family DELESSERIACEAE

Hypoglossum anomalum **Wynne & Ballantine**

2002 present study

Hypoglossum attenuatum **Gardner**

1985 Birkeland et al. 1987 Fagatele Bay

Hypoglossum simulans **Wynne, Price & Ballantine**

2002 present study

Martensia fragilis **Harvey**

2002 present study

Myriogramme **sp.**

2002 present study

Family ERYTHRICHIACEAE

Erythrotrichia **sp.**

2002 present study

Family FAUCHEACEAE

Halichrysis coalescens **(Farlow) R. Norris & Millar**

2002 present study

Family GALAXAURACEAE

Actinotrichia fragilis **(Forsskål) Børgesen**

1920 BPBM-526441 Aūa

1920 BPBM-526440.2 Aūa

1920 Setchell, 1924 Aūa

1920 Setchell 1924 Fagatele Bay

1963 BPBM-508990 Fagasā Bay

2002 present study

Actinotrichia **sp.**

1979 USACE 1980 Fagasā Bay

Galaxaura filamentosa **Chou**

2002 present study

Galaxaura marginata **(Ellis & Solander) Lamouroux**

2002 present study

Galaxaura rugosa **(Ellis & Solander) Lamouroux**

1920 Setchell, 1924 Aūa

Galaxaura **sp.**

1985 Sea Engineering 1986 Rainmaker Hotel

Family GELIDIACEAE

Gelidiella **sp.**

1985 Birkeland et al. 1987 Fagatele Bay

Gelidium **cf.** ***pusillum*** **(Stackhouse) Le Jolis**

2002 present study

Gelidium delicatulum **(Kützing) Setchell**

1920 Setchell, 1924 Aūa

Gelidium pusillum **(Stackhouse) Le Jolis**

1985 Birkeland et al. 1987 Fagatele Bay

1985 Birkeland et al. 1987 Fagasā Bay

Gelidium samoense **Reinbold**

1920 Setchell, 1924 Aūa

2002 present study

Gelidium **sp.**

2002 present study

Family GELIDIELLACEAE

Gelidiella acerosa **(Forsskål) Feldmann & Hamel**

1920 Setchell, 1924 Aūa
1964 BPBM-508904 Fagasā Bay
2002 present study

***Gelidiella* sp.**

1985 Birkeland et al. 1987 Fagasā Bay
NA BPBM-508925 Vatia Bay

Family GIGARTINACEAE

Chondracanthus tenellus **(Harvey) Hommersand**

2002 present study

Family HALYMENIACEAE

Cryptonemia decumbens **Weber-van Bosse**

1920 Setchell, 1924 Pago Pago Harbor;
2002 present study

Grateloupia* cf. *filicina **(Lamouroux) C. Agardh**

2002 present study

Halymenia durvillei **Bory de Saint Vincent** **Cryptogenic**

2002 present study

***Halymenia* sp.**

1990 Sea Engineering/AECOS 1991 Atuʻu-Leasi Pt.

Prionitis obtusa **Weber-van Bosse**

1920 Setchell 1924 Fagasā Bay

Family HELMINTHOCLADIACEAE

***Liogora* sp.**

1990 Sea Engineering/AECOS 1991 Atuʻu-Leasi Pt.

Family HYPNEACEAE

Hypnea nidulans **Setchell & Gardner**

1920 Setchell, 1924 Aūa

Hypnea pannosa **J. Agardh**

2002 present study

***Hypnea* sp.**

2002 present study

Hypnea spinella **(C. Agardh) Kutzing**

2002 present study

Family LIAGORACEAE

***Liagora* sp.**

1985 Birkeland et al. 1987 Fagasā Bay

Family LOMENTARIACEAE

Lomentaria corallicola **Børgesen**

2002 present study

Family PEYSSONNELIACEAE

***Peyssonellia* sp.**

1990 Sea Engineering/AECOS 1991 Atuʻu-Leasi Pt.

Peyssonnelia* cf. *bornetii

2002 present study

Peyssonnelia* cf. *delicata **Setchell**

2002 present study

Peyssonnelia* cf. *flavescens* sp. *in edit

2002 present study

Peyssonnelia* cf. *inamoena **Pilger**

2002 present study

Peyssonnelia delicata **Setchell**

1920 Setchell, 1924 Aūa

Peyssonnelia foveolata **(Weber-van Bosse) Denizot**

1920 Setchell, 1924 Aūa

Peyssonnelia mariti **(Weber-van Bosse) Denizot**

1920 Setchell, 1924 Utulei Reef

***Peyssonnelia rubra* (Greville) Agardh**

1920 Setchell, 1924 Aūa

1920 Setchell 1924 Fagatele Bay

***Peyssonnelia* sp.**

1985 Birkeland et al. 1987 Fagatele Bay

1985 Birkeland et al. 1987 Fagasā Bay

2002 present study

***Polystrata dura* Heydrich**

1920 Setchell, 1924 Aūa

Family PORPHYRIIDIACEAE

Stylonema alsidii

1920 Setchell, 1924 Pago Pago Harbor

Family RHODOMELACEAE

***Bostrychia tenella* (Lamouroux) J. Agardh**

2002 present study

***Herposiphonia delicatula* Hollenberg**

2002 present study

***Herposiphonia secunda f. tenella* (C. Agardh) Ambronn**

1985 Birkeland et al. 1987 Fagasā Bay

2002 present study

***Herposiphonia* sp.**

2002 present study

***Herposiphonia tenella* (C.Agardh) F.Schmitz**

1985 Birkeland et al. 1987 Fagatele Bay

***Laurencia ceylanica* J. Agardh**

1920 Setchell, 1924 Aūa

***Laurencia nidifica* J. Agardh**

1920 Setchell, 1924 Aūa, Pago Pago Harbor

***Laurencia obtusa* (Huds,) Lamx.**

1985 Birkeland et al. 1987 Fagatele Bay

***Laurencia* sp.**

2002 present study

***Lobosiphonia villum* (J. Ag.) Setchel & Gardner**

1985 Birkeland et al. 1987 Fagatele Bay

***Polysiphonia (Neosiphonia) howei* Hollenberg**

2002 present study

***Polysiphonia (Neosiphonia) savatieri* Hariot**

2002 present study

***Polysiphonia (Neosiphonia) scopulorum* var. *minima* Hollenberg**

2002 present study

***Polysiphonia (Neosiphonia)* sp.**

2002 present study

***Polysiphonia (Neosiphonia) sparsa* (Setchell) Hollenberg**

2002 present study

***Polysiphonia (Neosiphonia) sphaerocarpa* Børgesen**

2002 present study

***Polysiphonia mollis* var. *tongatensis* (Harvey) Hollenberg**

1920 Setchell, 1924 Pago Pago Harbor

***Polysiphonia scopulorum* Harvey**

1920 Setchell 1924 Fagatele Bay

1964 BPBM-592242 Vatia Bay

1964 BPBM-592240 Vatia Bay

1964 BPBM-592241 Vatia Bay

1985 Birkeland et al. 1987 Fagatele Bay

1985 Birkeland et al. 1987 Rainmaker Hotel

1985 Birkeland et al. 1987 Fagasā Bay

Polysiphonia simplex

NA BPBM-508930 Vatia Bay

***Polysiphonia* sp.**

1985 Birkeland et al. 1987 Fagasā Bay

***Polysiphonia sphaerocarpa* Børgesen**
1964 BPBM-587351 Vatia Bay
1964 BPBM-587350 Vatia Bay
1964 BPBM-587354 Vatia Bay
1964 BPBM-587352 Vatia Bay
1964 BPBM-587361 Vatia Bay
1964 BPBM-587330 Vatia Bay
1964 BPBM-587355 Vatia Bay
1964 BPBM-587353 Vatia Bay
***Polysiphonia upolensis* (Grunow) Hollenb.**
1964 BPBM-587999 Vatia Bay
***Tolypiocladia glomerulata* (C. Agardh) Schmitz**
1920 Setchell, 1924 Pago Pago Harbor
1974 BPBM-540368 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

Family RHODYMENIACEAE

***Botryocladia* sp.**
2002 present study
***Coelothrix irregularis* (Harvey) Børgesen**
2002 present study
***Gelidiopsis intricata* (C. Agardh) Vickers**
1920 Setchell 1924 Fagatele Bay
1920 Setchell, 1924 Aūa
2002 present study
***Gelidiopsis repens* (Kützing) Weber van Bosse**
2002 present study
***Rhodymenia* sp.**
NA BPBM-508911 Vatia Bay

Family SCHIZYMENIACEAE

***Titanophora weberae* Børgesen**
2002 present study

Phylum MAGNOLIOPHYTA

Family HYDROCHATIALES

***Halophila ovalis* (R. Brown) Hooker**
2002 present study
***Halophila* sp.**
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay

ANIMALIA

Phylum PORIFERA

Class CALCAREA

Subclass CALCINEA

Order CLATHRINIDA

Family CLATHRINIDAE

***Clathrina* sp.**
2002 present study

Family LEUCETTIDAE

***Leucetta* cf. *chagosensis* Dendy, 1913**
2002 present study
***Leucetta* sp.**
2002 present study

UNID. CALCAREA

unid. Calcarea
2002 present study

Class DEMOSPONGIAE
Subclass TETRACTINOMORPHA
Order SPIROPHORIDA
Family TETILLIDAE
***Cinachyra* sp.**
2002 present study
***Craniella abracadabra* de Laubenfels, 1954**
2002 present study
***Paratetilla bacca* Selenka, 1867**
2002 present study
Order ASTROPHORIDA
Family COPPATIIDAE
***Jaspis* sp.**
2002 present study
Order HADROMERIDA
Family CRANIELLIDAE
***Cynachyra* sp.**
2002 present study
Family POLYMASTIIDAE
***Polymastia* sp.**
2002 present study
Family SPIRASTRELLIDAE
***Spirastrella* sp.**
2002 present study
Family TETHYIDAE
***Tethya* sp.**
2002 present study
Subclass CERACTINOMORPHA
Order AGELASIDA
Family AGELASIDAE
***Agelas* sp.1**
2002 present study
***Agelas* sp.2**
2002 present study
Order POECILOSCLERIDA
Suborder MYCALINA
Family DESMACELLIDAE
***Biemna* sp.** **Cryptogenic**
2002 present study
Family MYCALIDAE
***Mycale* sp.**
2002 present study
Order HALICHONDRIDA
Family AXINELLIDAE
***Axinella* ?*carteri* (Dendy, 1889)**
2002 present study
***Phakellia cavernosa* (Dendy, 1889)**
2002 present study
Stylissa ?*flabelliformis* (Hentschel, 1912)
2002 present study
***Stylissa massa* (Carter, 1889)**
2002 present study
Family HALICHONDRIIDAE
***Axinyssa* sp.**
2002 present study
***Halichondria* sp.1**
2002 present study

***Halichondria* sp.2**
2002 present study

Order HAPLOSCLERIDA

Family CALLYSPONGIIDAE

***Callyspongia* (*Callyspongia*) sp.**
2002 present study

***Callyspongia* (*Cladochalina*) sp.**
2002 present study

***Callyspongia* sp.**
2002 present study

Family CHALINIDAE

***Haliclona* (*Haliclona*) sp.**
2002 present study

***Haliclona* (*Reniera*) sp.**
2002 present study

***Haliclona* (*Sigmadocia*) sp.**
2002 present study

Family PETROSIIDAE

***Xestospongia* sp.**
2002 present study

Order DICTYOCERATIDA

Family THORECTIDAE

***Hyrtios erecta* (Keller, 1889)**
2002 present study

***Hyrtios* sp.**
2002 present study

***Psammocinia* sp.**
2002 present study

Order DENDROCERATIDA

Family DYSIDEIDAE

***Dysidea* sp.**
2002 present study

***Dysidea herbacea* (Keller, 1889)**
2002 present study

***Dysidea* sp.1**
2002 present study

***Dysidea* sp.2**
2002 present study

***Dysidea* sp.3**
2002 present study

***Euryspongia delicata* (Thiele, 1905)**
2002 present study

Family DARWINELLIDAE

***Chelonaplysilla* sp.**
2002 present study

***Dendrilla* sp.**
2002 present study

***Pleuraplysilla* sp.**
2002 present study

Family DICTYODENDRILLIDAE

***Dictyodendrilla* sp.**
2002 present study

Phylum CNIDARIA

Class HYDROZOA

Order HYDROIDA

Family AGALOPHENIIDAE

***Aglaophenid* (fragment)**
2002 present study

***Gymnangium eximium* (Allman, 1874)**
2002 present study
***Gymnangium hians* (Busk, 1852)**
2002 present study
***Lytocarpia brevirostris* (Busk, 1852)**
2002 present study
***Lytocarpia phyteuma* (Kirchenpauer, 1876)**
2002 present study

Family CLAVIDAE

***Turritopsis nutricula* McCrady, 1856** **Introduced**
2002 present study

Family EUDENDRIIDAE

***Eudendrium* sp.**
2002 present study
***Myrionema amboinense* Pictet, 1893**
2002 present study

Family HALECIIDAE

***Halecium* sp. (fragment)**
2002 present study

Family HALOCORDYLIDAE

***Pennaria disticha* (Goldfuss, 1820)** **Introduced**
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
2002 present study

Family LAFOEIDAE

***Hebellopsis scandens* (Bale, 1888)**
2002 present study
***Zygophylax rufa* (Bale, 1884)**
2002 present study

Family PLUMULARIIDAE

***Kirchenpaueria irregularis* (Millard, 1958)**
2002 present study
***Plumularia spiralis* Billard, 1911**
2002 present study
***Plumularia strictocarpa* Pictect, 1893** **Cryptogenic**
2002 present study
***Plumularia strobilophora* Billard, 1913**
2002 present study

Family SERTULARIIDAE

***Dynamena crisioides* Lamouroux, 1824** **Cryptogenic**
2002 present study
***Sertularella diaphana* (Allman, 1885)** **Cryptogenic**
2002 present study
***Sertularella orthogonalis* Gibbons & Ryland, 1989**
2002 present study
***Sertularella robusta* Coughtrey, 1876**
2002 present study
***Sertularia malayensis* Billard, 1925**
2002 present study
***Thyroscyphus fruticosus* (Esper, 1793)** **Cryptogenic**
2002 present study

Order MILLEPORINA

Family MILLEPORIDAE

***Millepora dichotoma* Forsskål, 1775**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Rainmaker Hotel
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Millepora exaesa* (Forsskål, 1775)**
1995 Green et al. 1997 Aūa
***Millepora platyphylla* Hemprich & Ehrenberg, 1834**
1974 BPBM-D 471 Vatia Bay
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1985 Sea Engineering 1986 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study
***Millepora* sp.**
1917 Mayor 1924a Aūa
1973 Dahl & Lamberts 1977 Aūa
1974 Randall & Devaney 1974 Vatia Bay
1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Fagatele Bay
1979 USACE 1980 Vatia Bay
1979 USACE 1980 Aūa
1995 Green et al. 1997 Aūa
2002 Work & Raymeyer 2002 Faga'alu
***Millepora tuberosa* Boschma, 1966**
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Order STYLASTERINA

Family STYLASTERIIDAE

***Distichopora gracilis* Dana, 1846**
1985 Birkeland et al. 1987 Fagasā Bay
***Distichopora* sp.**
2002 present study
***Stylaster* sp.**
1979 USACE 1980 (as *Stylaster aurea*) Aūa
***Stylaster gracilis* Milne Edwards & Haime, 1849**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay
***Stylaster* sp.**
1974 Dames & Moore 1974 Ava Point
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
2002 present study

Class ANTHOZOA

Subclass OCTOCORALLIA

Order GORGONACEA

Family MELITHAEIDAE

***Acabaria bicolor* Nutting, 1908**
2002 present study
***Acabaria* sp.**
2002 present study

Family PLEXAURIDAE

cf. *Villagorgia* sp.
2002 present study

UNID. GORGONACEA

Gorgonian sp. 1
2002 present study

Gorgonian sp. 2
2002 present study

Order ALCYONACEA

Family ALCYONIIDAE

***Cladiella pachyclados* (Klunzinger, 1877)**
1974 BPBM-D 490 Vatia Bay

***Cladiella* sp.**
2002 present study

***Lobophytum* spp.**
2002 present study

***Lobophytum variatum* Tixise-Durivault, 1957**
1974 BPBM-D 492 Vatia Bay

***Nepthya* sp.**
1917 Cary 1931 (as Nepthya flexile) Utulei

***Sarcophyton acutangulum* (von Marenzeler, 1886)**
1974 BPBM-D 491 Vatia Bay

***Sarcophyton* sp.**
1917 Cary 1931 (as *Sarcophytum latum*) Utulei
1979 USACE 1980 Aūa
1985 Birkeland et al. 1987 Fagatele Bay
2002 Work & Raymeyer 2002 Tafagamanu
2002 present study

***Sinularia densa* (Whitelegge, 1897)**
1917 Cary 1931 (as *Scleropytum densum*) Utulei

***Sinularia polydactyla* (Ehrenberg, 1834)**
1923 BPBM-D 511 Pago Pago Harbor

***Sinularia procera* Verseveldt, 1977**
1923 BPBM-D 512 Pago Pago Harbor

***Sinularia* sp.**
1917 Cary 1931 (as *Scleropytum confertum*) Utulei
1979 USACE 1980 Aūa
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay
1985 Sea Engineering 1986 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.

Family NEPHTHEIDAE

***Dendronepthea* sp. 1-white**
2002 present study

***Dendronepthea* sp. 2-lumpy**
2002 present study

***Dendronepthea* sp. 3-red**
2002 present study

Order HELIOPORACEA

Family HELIOPORIDAE

***Heliopora coerulea* (Pallas, 1776)**
2002 present study

Subclass HEXACORALLIA

Order ACTINIARIA

Family ACTINIIDAE

***Anthopleura* sp.**
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.

***Entacmaea quadricolor* (Rüppell & Leuckart, 1828)**
2002 present study

Family DISCOSOMATIDAE

***Rhodactis howesii* Saville Kent,**
1957 BPBM-D 337 Pago Pago Harbor

***Rhodactis* sp.**
1985 Sea Engineering 1986 Rainmaker Hotel

Family STICHODACTYLIDAE

***Heteractis* sp.**

2002 present study

Order SCLERACTINIA

Family ACROPORIDAE

***Acropora* ?*donei* Veron & Wallace, 1984**

2002 present study

***Acropora* ?*horrida* (Dana, 1846)**

2002 present study

***Acropora* ?*latistella* (Brook, 1891)**

2002 present study

***Acropora* ?*nobilis* (Dana, 1846)**

2002 present study

***Acropora* ?*prostrata* (Dana, 1846)**

2002 present study

***Acropora* ?*pulchra* (Brook, 1891)**

2002 present study

***Acropora* ?*robusta* (Dana, 1846)**

1985 Birkeland et al. 1987 Fagasā Bay

2002 present study

***Acropora* ?*yongei* Veron & Wallace, 1984**

2002 present study

***Acropora abrotanoides* (Lamarck, 1816)**

1985 Birkeland et al. 1987 Rainmaker Hotel

1985 Birkeland et al. 1987 Fagasā Bay

2002 Work & Rameyer 2002 Fagatele Bay

2002 present study

***Acropora acuminata* (Verrill, 1864)**

1992 Maragos et al. 1994 North Outer Harbor

1995 Green et al. 1999 Fagatele Bay

2002 present study

***Acropora* aff. *cophodactyla* (Brook, 1892)**

2002 present study

***Acropora* aff. *valida* (Dana, 1846)**

2002 present study

***Acropora aspera* (Dana, 1846)**

1973 Dahl & Lamberts 1977 (as *Acropora hebes*) Aūa

***Acropora austera* (Dana, 1846)**

2002 present study

***Acropora azurea* Veron & Wallace, 1984**

1985 Birkeland et al. 1987 Fagasā Bay

1985 Birkeland et al. 1987 Rainmaker Hotel

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

***Acropora cerealis* (Dana, 1846)**

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

***Acropora* cf. *austera* (Dana, 1846)**

2002 present study

***Acropora* cf. *diversa* (Brook, 1892)**

2002 present study

***Acropora* cf. *gemmifera* (Brook, 1892)**

1995 Green et al. 1999 Fagatele Bay

***Acropora* cf. *globiceps* (Dana, 1846)**

2002 present study

***Acropora* cf. *granulosa* (Milne Edwards & Haime, 1860)**

2002 present study

***Acropora* cf. *nana* (Studer, 1878)**
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1997 Aūa
1995 Green et al. 1999 Fagatele Bay
***Acropora* cf. *quelchi* (Brook, 1893)**
2002 present study
***Acropora* cf. *samoensis* (Brook, 1891)**
1917 Mayor 1924a Aūa
***Acropora clathrata* (Brook, 1891)**
2002 present study
***Acropora complanata* (Brook, 1891)**
1985 Birkeland et al. 1987 Fagasā Bay
***Acropora crateriformis* Gardiner, 1898)**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study
***Acropora cytherea* (Dana, 1848)**
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 Work & Raymeyer 2002 Tafagamanu
2002 present study
***Acropora danai* (Milne Edwards & Haime, 1860)**
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
***Acropora digitifera* (Dana, 1846)**
1917 Mayor 1924a (as *Acropora leptocyathus*) Aūa
1974 Randall & Devaney 1974 (as *Acropora leptocyathus*) Vatia Bay
1974 Dames & Moore 1974 (as *Acropora leptocyathus*) Ava Point
1979 USACE 1980 Fagasā Bay
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
2002 Work & Rameyer 2002 Fagatele Bay
***Acropora divaricata* (Dana, 1846)**
1985 Birkeland et al. 1987 Fagasā Bay
***Acropora echinata* (Dana, 1846)**
1992 Maragos et al. 1994 Fagatele Bay
***Acropora formosa* (Dana, 1846)**
1917 Mayor 1924a (as *Acropora* cf. *muricata*) Aūa
1973 Dahl & Lamberts 1977 Aūa
1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Aūa
1992 Maragos et al. 1994 North Outer Harbor
***Acropora gemmifera* (Dana, 1846)**
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
2002 present study
***Acropora globiceps* (Dana, 1846)**
1985 Birkeland et al. 1988 (as *A. wardi*) Fagasā Bay
***Acropora granulosa* Milne Edwards & Haime, 1860)**
2002 present study

***Acropora humilis* (Dana, 1846)**

1973 Dahl & Lamberts 1977 Aūa
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay
1979 USACE 1980 Fagatele Bay
1979 USACE 1980 Fagasā Bay
1979 USACE 1980 Utulei
1979 USACE 1980 Aūa
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acropora hyacinthus* (Dana, 1846)**

1917 Mayor 1924a Aūa
1973 Dahl & Lamberts 1977 Aūa
1974 Dames & Moore 1974 Ava Point
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Fagasā Bay
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study
2002 Work & Rameyer 2002 Fagatele Bay

***Acropora irregularis* (Brook, 1892)**

1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay

***Acropora listeri* (Brook, 1893)**

1974 Dames & Moore 1974 (as *Acropora tutuilensis*) Ava Point
1985 Birkeland et al. 1987 (as *Acropora tutuilensis*) Fagatele Bay
1995 Green et al. 1999 (as *Acropora tutuilensis*) Fagatele Bay

***Acropora loripes* (Brook, 1892)**

1995 Green et al. 1999 Fagatele Bay

***Acropora millepora* (Ehrenberg, 1834)**

1995 Green et al. 1999 Fagatele Bay

***Acropora monticulosa* (Bruggemann, 1879)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acropora muricata* (Linnaeus, 1758)**

2002 present study

***Acropora nana* (Studer, 1878)**

1979 USACE 1980 Fagasā Bay
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay

***Acropora nasuta* (Dana, 1846)**

1973 Dahl & Lamberts 1977 Aūa
1974 Dames & Moore 1974 (as *Acropora cymbiculatus*) Ava Point
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acropora nobilis* (Dana, 1846)**

1979 USACE 1980 (as *Acropora intermedia*) Fagatele Bay
1979 USACE 1980 (as *Acropora intermedia*) Fagasā Bay
1985 Birkeland et al. 1987 Rainmaker Hotel

1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay

***Acropora ocellata* (Kluzinger, 1879)**
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

Acropora *pagoensis* Hoffmeister, 1925
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Acropora palifera* (Lamarck, 1816)**
1974 Dames & Moore 1974 Ava Point
1984 Birkeland et al. 1986 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acropora palmerae* Wells, 1954**
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acropora paniculata* Verrill, 1902**
2002 present study

***Acropora paxilligera* Dana, 1846**
1995 Green et al. 1999 Fagatele Bay

***Acropora robusta* (Dana, 1846)**
1979 USACE 1980 (as *Acropora pinquis*) Fagatele Bay
1979 USACE 1980 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay

***Acropora samoensis* (Brook, 1891)**
1974 Randall & Devaney 1974 Vatia Bay
1974 Dames & Moore 1974 Ava Point
1974 BPBM-SC 643 Vatia Bay
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 (as *Acropora pagoensis*) Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagatele Bay
2002 present study

***Acropora schmitti*? Wells, 1950**
1985 Birkeland et al. 1987 (as *Acropora smithi*) Fagatele Bay

***Acropora selago* (Studer, 1878)**
1992 Maragos et al. 1994 (as *Acropora delicatula*) North Outer Harbor
2002 present study

***Acropora smithi* (Brook, 1893)**
1995 Green et al. 1999 Fagatele Bay

***Acropora* sp.**
1900 BPBM-SC 3014 Pago Pago Harbor, unspec. Loc.
1992 Maragos et al. 1994 Fagasā Bay
2002 present study

***Acropora* sp. 1**
2002 present study

***Acropora* sp. 2**
2002 present study

***Acropora* sp. 3**
2002 present study

***Acropora squamosa* (Ehrenberg, 1834)**
1985 Birkeland et al. 1987 Fagatele Bay

***Acropora squarrosa* (Ehrenberg, 1834)**

1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Rainmaker Hotel

***Acropora tenuis* (Dana, 1846)**
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acropora teres* (Verrill, 1866)**
1974 Randall & Devaney 1974 Vatia Bay

***Acropora valida* (Dana, 1846)**
1985 Birkeland et al. 1987 Fagatele Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acropora verweyi* Veron & Wallace, 1984**
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acropora yongei* Veron & Wallace, 1984**
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Astreopora cucullata* Lamberts, 1980**
2002 present study

***Astreopora eliptica* Yabe & Sugiyama, 1941**
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Rainmaker Hotel

***Astreopora listeri* Bernard, 1896**
2002 present study

***Astreopora myriophthalma* (Lamarck, 1816)**
1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Rainmaker Hotel
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 (as *Astreopora elliptica*) Fagatele Bay
2002 present study

***Astreopora randalli* Lamberts, 1980**
1985 Birkeland et al. 1987 Fagasā Bay
2002 present study

***Astreopora* sp.**
1979 USACE 1980 Aūa
1979 USACE 1980 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Montipora aequituberculata* Bernard, 1897**
1992 Maragos et al. 1994 Fagatele Bay
2002 present study (as *Montipora* ?*aequituberculata*)

***Montipora berryi* Hoffmeister, 1925**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Montipora caliculata* (Dana, 1846)**
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Montipora* cf. *verrilli* Vaughan, 1907**
1985 Sea Engineering 1986 Rainmaker Hotel

***Montipora conicula* Wells, 1954**
2002 present study

***Montipora ehrenbergii* Verrill, 1975**

1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Fagasā Bay
1995 Green et al. 1997 Aūa
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Montipora elshneri* Vaughan, 1918**

1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1995 Green et al. 1997 Aūa
2002 present study

***Montipora floweri* Wells, 1954**

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Montipora foliosa* (Pallas, 1766)**

1992 Maragos et al. 1994 Vatia Bay
2002 present study

***Montipora foveolata* (Dana, 1846)**

1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay

***Montipora granulosa* Bernard, 1897**

1995 Green et al. 1997 Aūa
1995 Green et al. 1999 Fagatele Bay

***Montipora grisea* Bernard, 1897**

1995 Green et al. 1999 Fagatele Bay
1995 Green et al. 1997 Aūa
2002 present study

***Montipora hispida* (Dana, 1846)**

1985 Birkeland et al. 1987 Fagasā Bay
1995 Green et al. 1997 Aūa

***Montipora hoffmeisteri* Wells, 1954**

1992 Maragos et al. 1994 Vatia Bay
2002 present study (as *Montipora ?hoffmeisteri*)

***Montipora informis* Bernard, 1897**

1985 Birkeland et al. 1987 Fagasā Bay

***Montipora lobulata* Bernard, 1897**

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Montipora marshallensis* Wells, 1954**

1985 Birkeland et al. 1987 Fagasā Bay

***Montipora monasteriata* (Forsskål, 1775)**

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Montipora nodosa* (Dana, 1846)**

2002 Work & Raymeyer 2002 Faga'alu

***Montipora socialis* Bernard, 1898**

1985 Birkeland et al. 1987 Fagasā Bay
2002 present study

***Montipora* sp.**

1917 Mayor 1924a Aūa
1973 Dahl & Lamberts 1977 Aūa
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Fagasā Bay
1979 USACE 1980 Utulei
1979 USACE 1980 Leloaloa
1979 USACE 1980 Fagatele Bay
1985 Sea Engineering 1986 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 North Outer Harbor
2002 Work & Raymeyer 2002 Tafagamanu

***Montipora tuberculosa* (Lamarck, 1816)**

1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Montipora turgescens* Bernard, 1897**

1995 Green et al. 1999 Fagatele Bay
2002 present study (as *Montipora* ?*turgescens*)

***Montipora venosa* (Ehrenberg, 1834)**

1985 Birkeland et al. 1987 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay
1995 Green et al. 1997 Aūa

***Montipora verrilli* Vaughan, 1907**

1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
1995 Green et al. 1997 Aūa
2002 present study

***Montipora verrucosa* (Lamarck,1816)**

1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 North Outer Harbor
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Montipora* sp.**

1992 Maragos et al. 1994 Fagasā Bay
2002 present study

Family AGARICIIDAE

***Coeloseris mayeri* Vaughan, 1918**

2002 present study

***Gardineroseris planulata* (Dana, 1846)**

1985 Birkeland et al. 1987 Fagatele Bay
1986 Birkeland et al. 1987 Rainmaker Hotel
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Leptoseris* cf. *mycetoseroides* Wells, 1954**

1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.

***Leptoseris explanata* Yabe & Sugiyama, 1941**

1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 North Outer Harbor
1992 Maragos et al. 1994 Vatia Bay
2002 present study

***Leptoseris gardineri* (van der Horst, 1921)**

1974 BPBM-SC 651 Utulei

***Leptoseris incrustans* (Quelch, 1886)**

2002 present study

***Leptoseris mycetoseroides* Wells, 1954**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagasā Bay
1992 Maragos et al. 1994 Fagatele Bay
2002 present study

***Leptoseris scabra* Vaughan, 1907**

1974 Dames & Moore 1974 Ava Point
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagasā Bay
1992 Maragos et al. 1994 Fagatele Bay
2002 present study

***Leptoseris* sp.**

1985 Sea Engineering 1986 Rainmaker Hotel

***Pachyseris rugosa* (Lamarck, 1801)**

1992 Maragos et al. 1994 Fagasā Bay
1992 Maragos et al. 1994 Vatia Bay

***Pachyseris speciosa* (Dana, 1846)**

1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Aūa
1979 USACE 1980 Utulei
1985 Sea Engineering 1986 Rainmaker Hotel
1992 Maragos et al. 1994 Fagasā Bay
1992 Maragos et al. 1994 North Outer Harbor
2002 present study

***Pavona* cf. *diffluens* (Lamarck, 1816)**

1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Rainmaker Hotel

***Pavona clavus* Nemenzo, 1980**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Fagatele Bay
2002 present study

***Pavona decussata* (Dana, 1846)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1995 Green et al. 1997 Aūa
2002 present study

***Pavona divaricata* (Lamark, 1816)**

1917 Mayor 1924a Aūa
1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 North Outer Harbor
1995 Green et al. 1997 Aūa
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pavona duerdeni* Vaughan, 1907**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pavona explanata* (Lamarck, 1816)**

1979 USACE 1980 (as *Pavona planata*) Aūa

***Pavona explanulata* (Lamarck, 1816)**

1985 Birkeland et al. 1987 Fagasā Bay
2002 present study

***Pavona frondifera* Lamarck, 1816**

1973 Dahl & Lamberts 1977 Aūa
1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Aūa
1979 USACE 1980 Leloaloa
1985 Sea Engineering 1986 Rainmaker Hotel

***Pavona maldivensis* (Gardiner, 1905)**

1974 BPBM-SC 645 (as *Pavona poliicata*) Fagasā Bay
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pavona minuta* Wells, 1954**

2002 present study

***Pavona* sp. 1 aff. *varians* Randall & Myers 1983**

2002 present study

***Pavona* sp. 2 aff. *varians* Randall & Myers 1983**

2002 present study

***Pavona varians* Verrill, 1864**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Rainmaker Hotel
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 North Outer Harbor
1992 Maragos et al. 1994 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pavona venosa* (Ehrenberg, 1834)**

1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1997 Aūa
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pavona* sp.**

1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Aūa
1979 USACE 1980 Vatia Bay
1985 Sea Engineering 1986 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagasā Bay

Family ASTROCOENIIDAE

***Stylocoeniella armata* (Ehrenberg, 1834)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Family CARYOPHYLLIIDAE

***Euphyllia glabrescens* (Chamisso & Eysenhardt, 1821)**

1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Family DENDROPHYLLIIDAE

***Tubastraea aurea* (Quoy & Gaimard, 1833)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Rainmaker Hotel

***Tubastraea* sp.**

2002 present study

***Turbinarea ?frondens* (Dana, 1846)**

2002 present study

***Turbinarea reniformis* Bernard, 1896**

1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Family FAVIIDAE

***Caulastrea furcata* Dana, 1846**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Cyphastrea chalcidicum* (Forsskål, 1775)**

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Cyphastrea microphthalma* (Lamarck, 1816)**

1974 BPBM-SC 648 Pago Pago Harbor, Faga'alu Bay
1992 Maragos et al. 1994 Fagasā Bay
1992 Maragos et al. 1994 Vatia Bay
2002 present study

***Cyphastrea serailia* (Forsskål, 1775)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Cyphastrea* sp.**

1917 Mayor 1924a Aūa
1995 Green et al. 1997 Aūa

***Diploastrea heliopora* (Lamarck, 1816)**

1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Utulei
1985 Birkeland et al. 1987 Fagasā Bay
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 North Outer Harbor
1992 Maragos et al. 1994 Fagasā Bay
2002 present study

***Echinopora ?hirsutissima* Milne Edwards & Haime, 1849**

2002 present study

***Echinopora gemmacea* Lamarck, 1816**

2002 present study

***Echinopora hirsutissima* Milne Edwards & Haime, 1849**

1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay

***Echinopora lamellosa* (Esper, 1795)**

1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Aūa
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Favia* ?*danae* Verrill, 1872**
2002 present study

***Favia favus* Forsskål, 1775**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Favia heliantoides* Wells, 1954**
2002 present study

***Favia laxa* (Klunzinger,1879)**
1992 Maragos et al. 1994 Fagatele Bay

***Favia matthaii* Vaughan, 1918**
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Fagasā Bay
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 North Outer Harbor
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Favia pallida* Dana, 1846**
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Rainmaker Hotel
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Favia rotumana* Gardiner, 1899**
1979 USACE 1980 Utulei
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Favia speciosa* Dana, 1846**
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 North Outer Harbor
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Favia stelligera* Dana, 1846**
1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study
2002 Work & Raymeyer 2002 Tafagamanu

***Favia* sp.**
1985 Sea Engineering 1986 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Vatia Bay

***Favites abdita* Ellis & Solander, 1786**
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Favites* cf. *complanata* Ehrenberg, 1834**
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Favites* cf. *halicora* Ehrenberg, 1834**

1985 Birkeland et al. 1987 Fagatele Bay

***Favites complanata* Ehrenberg, 1834**

1985 Birkeland et al. 1987 Fagasā Bay
2002 present study (as *Favites* ?*complanata*)

***Favites flexuosa* Dana, 1846**

1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Favites halicora* Ehrenberg, 1834**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study (as *Favites* ?*halicora*)

***Favites pentagona* Esper, 1794**

1995 Green et al. 1997 Aūa
1995 Green et al. 1999 Fagatele Bay
2002 present study (as *Favites* ?*pentagona*)

***Favites russelli* (Wells, 1954)**

1985 Sea Engineering 1986 Rainmaker Hotel
1995 Green et al. 1999 Fagatele Bay
2002 present study (as *Favites* aff. *russelli*)

***Favites* sp.**

1917 Mayor 1924a Aūa
1973 Dahl & Lamberts 1977 Aūa

***Goniastrea* ?*aspera* Verrill, 1905**

2002 present study

***Goniastrea edwardsi* Chevalier, 1971**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Goniastrea favulus* (Dana, 1846)**

1995 Green et al. 1999 Fagatele Bay

***Goniastrea pectinata* (Ehrenberg, 1834)**

1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 North Outer Harbor
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study
2002 present study

***Goniastrea retiformis* (Lamarck, 1816)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Fagasā Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Goniastrea* sp.**

1992 Maragos et al. 1994 Fagasā Bay

***Leptastrea* ?*bewickensis* Veron & Pichon, 1977**

2002 present study

***Leptastrea* ?*pruinosa* Crossland, 1952**

2002 present study

***Leptastrea purpurea* Dana, 1846**

1917 Mayor 1924a Aūa
1973 Dahl & Lamberts 1977 Aūa
1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Leloaloa

1979 USACE 1980 Fagasā Bay
1979 USACE 1980 Aūa
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagasā Bay
1992 Maragos et al. 1994 Fagatele Bay

***Leptastrea purpurea* Dana, 1846**
1995 Green et al. 1999 Fagatele Bay
1995 Green et al. 1997 Aūa
2002 present study

***Leptastrea* sp.**
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.

***Leptastrea transversa* Klunzinger, 1879**
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Leptoria phrygia* (Ellis & Solander, 1786)**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Leptoria* sp.**
1917 Mayor 1924a Aūa
1974 Randall & Devaney 1974 Vatia Bay
1974 Dames & Moore 1974 Ava Point

***Montastrea annuligera* (Milne Edwards & Haime, 1849)**
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Montastrea curta* (Dana, 1846)**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Fagasā Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Montastrea* sp. 1**
2002 present study

***Montastrea* sp. 2**
2002 present study

***Oulophyllia crispa* (Lamarck, 1816)**
1985 Sea Engineering 1986 Rainmaker Hotel
2002 present study

***Platygyra* ?*lamellina* (Ehrenberg, 1834)**
2002 present study

***Platygyra daedalea* (Ellis & Solander, 1786)**

1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Fagasā Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Platygyra lamellina* (Ehrenberg, 1834)**

1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1995 Green et al. 1999 Fagatele Bay

***Platygyra pini* Chevalier, 1975**

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Platygyra sinensis* Milne Edwards & Haime, 1849**

1992 Maragos et al. 1994 Vatia Bay

***Platygyra* sp.**

1985 Sea Engineering 1986 Rainmaker Hotel

***Plesiastrea versipora* (Lamarck, 1816)**

1974 Dames & Moore 1974 Ava Point
2002 present study

Family FUNGIIDAE

***Cycloseris patelliformis* (Boschma, 1923)**

1974 Dames & Moore 1974 Ava Point
1992 Maragos et al. 1994 Fagatele Bay

***Fungia concinna* Verrill, 1864**

1992 Maragos et al. 1994 Vatia Bay

***Fungia danai* Milne Edwards & Haime, 1851**

1985 Birkeland et al. 1987 Rainmaker Hotel
2002 present study (as *Fungia* ?*danai*)

***Fungia echinata* (Pallas, 1766)**

2002 present study

***Fungia fungites* (Linneaus, 1758)**

1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Fungia horrida* Dana, 1846**

1992 Maragos et al. 1994 North Outer Harbor

***Fungia paumotensis* Stuchbury, 1833**

2002 present study

***Fungia repanda* Dana, 1846**

1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study (as *Fungia* ?*repanda*)

***Fungia scutaria* Lamarck, 1801**

1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Fungia* sp.**

1917 Mayor 1924a Aūa
1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Aūa
1985 Sea Engineering 1986 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 North Outer Harbor

***Halomitra pileus* (Linneaus, 1758)**

2002 present study

***Herpolitha limax* (Houttuyn, 1772)**

1992 Maragos et al. 1994 Vatia Bay
2002 present study

***Herpolitha* sp.**

1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.

***Sandolitha robusta* Quelch, 1886**

1985 Birkeland et al. 1987 Fagasā Bay
2002 present study

Family MERULINIDAE

***Hydnophora exesa* (Pallas, 1766)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1985 Sea Engineering 1986 Rainmaker Hotel
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Hydnophora microconos* (Lamarck, 1816)**

1917 Mayor 1924a Aūa
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Hydnophora rigida* (Dana, 1846)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Merulina ampliata* (Ellis & Solander, 1786)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Merulina scabricula* Dana, 1846**

1992 Maragos et al. 1994 Fagasā Bay
2002 present study

***Merulina* sp.**

1917 Mayor 1924a Aūa

***Merulina vaughani* van der Horst, 1921**

1995 Green et al. 1999 Fagatele Bay

***Scapophyllia cylindrica* Milne Edwards & Haime, 1848**

1992 Maragos et al. 1994 Vatia Bay
2002 present study

Family PECTINIIDAE

***Echinophyllia aspera* (Ellis & Solander, 1786)**

1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Utulei
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Echinophyllia echinata* (Saville-Kent, 1871)**

1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Echinophyllia* sp.**

1979 USACE 1980 Aūa

***Mycedium elephantotus* (Pallas, 1766)**

1992 Maragos et al. 1994 North Outer Harbor
2002 present study

***Mycedium* sp.**

1985 Sea Engineering 1986 Rainmaker Hotel

***Oxypora lacera* (Verrill, 1864)**

1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Vatia Bay
2002 present study (as *Oxypora ?lacera*)

Family MUSSIDAE

***Acanthastrea echinata* (Dana, 1846)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Lobophyllia corymbosa* (Forsskål, 1775)**

1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Lobophyllia costata* (Dana, 1846)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Lobophyllia hemprichii* (Ehrenberg, 1834)**

1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 Work & Raymeyer 2002 Tafagamanu
2002 present study

***Scolymia* sp.**

2002 present study

***Symphyllia recta* (Dana, 1846)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study (as *Symphyllia* ?*recta*)

Family OCULINIDAE

***Galaxea fascicularis* (Linneaus, 1767)**

1917 Mayor 1924a Aūa
1973 Dahl & Lamberts 1977 Aūa
1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Fagasā Bay
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Galaxea* sp.**

1979 USACE 1980 Fagatele Bay

Family POCILLOPORIDAE

***Pocillopora ankeli* Scheer & Pilai, 1974**

1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Pocillopora damicornis* (Linnaeus, 1758)**

1917 Mayor 1924a Aūa
1973 Dahl & Lamberts 1977 (as *Pocillopora brevicornis*) Aūa
1973 Dahl & Lamberts 1977 Aūa
1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 (as *Pocillopora brevicornis*) Leloaloa
1979 USACE 1980 Aūa
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Sea Engineering 1986 (as *Pocillopora brevicornis*) Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 North Outer Harbor
1995 Green et al. 1997 Aūa
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pocillopora danae* Verrill, 1864**

1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1997 Aūa
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pocillopora elegans* Dana, 1846**

1979 USACE 1980 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pocillopora eydouxi* Milne Edwards & Haime, 1849**

1973 Dahl & Lamberts 1977 Aūa
1974 Dames & Moore 1974 Ava Point
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Aūa
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

1995 Green et al. 1997 Aūa
2002 present study

***Pocillopora ligulata* Dana, 1846**
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study (as *Pocillopora* cf. *ligulata*)

***Pocillopora meandrina* Dana, 1846**
1979 USACE 1980 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pocillopora setchelli* Hoffmeister, 1929**
1979 USACE 1980 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pocillopora verrucosa* (Ellis & Solander, 1786)**
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Fagatele Bay
1979 USACE 1980 Vatia Bay
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Seriatopora angulata* Klunzinger, 1879**
1974 Randall & Devaney 1974 Vatia Bay

***Seriatopora hystrix* Dana, 1846**
1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Aūa

***Stylophora mordax* (Dana, 1846)**
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Stylophora pistllata* Esper, 1797**
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay

Family PORITIDAE

***Alveopora allingi* Hoffmeister, 1925**
1992 Maragos et al. 1994 Vatia Bay

***Alveopora superficialis* Pillai & Scheer, 1976**
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Alveopora viridis* Quoy & Gaimard, 1833**
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Goniopora* cf. *lobata* Milne Edwards & Haime, 1860**
2002 present study

***Goniopora columna* Dana, 1846**
2002 present study

***Goniopora minor* Crossland, 1952**
2002 present study

***Goniopora somaliensis* Vaughan, 1907**

1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Goniopora* sp.**

1917 Mayor 1924a Aūa
1974 Dames & Moore 1974 Ava Point
1992 Maragos et al. 1994 North Outer Harbor
1992 Maragos et al. 1994 Fagasā Bay

***Porites annae* Crossland, 1952**

1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Porites australiensis* Vaughan, 1918**

1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
2002 present study

***Porites convexa* Verrill, 1864**

1974 Randall & Devaney 1974 Vatia Bay
1974 BPBM-SC 640 Vatia Bay
1985 Birkeland et al. 1987 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Porites cylindrica* Dana, 1846**

1917 Mayor 1924a (as *Porites andrewsi*) Aūa
1973 Dahl & Lamberts 1977 (as *Porites andrewsi*) Aūa
1974 Dames & Moore 1974 (as *Porites andrewsi*) Ava Point
1974 Randall & Devaney 1974 (as *Porites andrewsi*) Vatia Bay
1979 USACE 1980 (as *Porites andrewsi*) Vatia Bay
1979 USACE 1980 (as *Porites andrewsi*) Aūa
1979 USACE 1980 (as *Porites andrewsi*) Utulei
1985 Sea Engineering 1986 (as *Porites andrewsi*) Rainmaker Hotel
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Porites horizontalata* Hoffmeister, 1925**

1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
2002 present study

***Porites lichen* Dana, 1846**

1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Porites lobata* Dana, 1846**

1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Fagasā Bay
1979 USACE 1980 Fagatogo
1985 Sea Engineering 1986 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Fagasā Bay
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Porites lutea* Milne Edwards & Haime, 1860**

1917 Mayor 1924a Aūa
1973 Dahl & Lamberts 1977 Aūa
1974 Dames & Moore 1974 Ava Point
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay
1979 USACE 1980 Aūa
1979 USACE 1980 Leloaloa
1979 USACE 1980 Fagatele Bay
1979 USACE 1980 Utulei
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 North Outer Harbor
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay

***Porites lutea* Milne Edwards & Haime, 1860**

1995 Green et al. 1999 Fagatele Bay
1995 Green et al. 1997 Aūa
2002 present study

***Porites monticulosa* Dana, 1846**

1985 Birkeland et al. 1987 Fagasā Bay

***Porites murrayensis* Vaughan, 1918**

1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study (as *Porites* ?*murrayensis*)

***Porites rus* (Forsskål, 1775)**

1979 USACE 1980 (as Porites (S.) undulata) Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1992 Maragos et al. 1994 Fagasā Bay
1992 Maragos et al. 1994 Fagatele Bay
1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1997 Aūa
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Porites solida* (Forsskål, 1775)**

2002 present study

***Porites superfusa* Gardiner, 1898**

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Porites vaughani* Crossland, 1952**

1992 Maragos et al. 1994 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Porites* sp.**

1979 USACE 1980 Utulei
1979 USACE 1980 Aūa
1985 Birkeland et al. 1987 Fagatele Bay
1992 Maragos et al. 1994 Fagasā Bay
2002 present study
2002 Work & Raymeyer 2002 Tafagamanu

***Stylarea punctata* (Linneaus, 1758)**

1995 Green et al. 1997 Aūa
2002 present study

Family SIDERASTREIDAE

***Coscinerea columna* (Dana, 1846)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Fagasā Bay
1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Coscinerea wellsi* Veron & Pichon,1980**

1992 Maragos et al. 1994 Fagasā Bay

***Psammocora* cf. *obtusangula* (Lamarck, 1816)**

2002 present study

***Psammocora contigua* (Esper, 1797)**

1973 Dahl & Lamberts 1977 Aūa
1974 Randall & Devaney 1974 Vatia Bay
1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Vatia Bay
1979 USACE 1980 Aūa
1979 USACE 1980 Aūa
1985 Birkeland et al. 1987 Fagatele Bay
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1992 Maragos et al. 1994 Fagasā Bay
1995 Green et al. 1997 Aūa
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Psammocora digitata* Milne Edwards & Haime, 1851**

2002 present study

***Psammocora explanulata* Van der Horst, 1922**

2002 present study

***Psammocora haimeana* Milne Edwards & Haime, 1860**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Psammocora nierstraszi* Van der Horst, 1922**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Psammocora profundicella* Gardiner, 1898**

1992 Maragos et al. 1994 Vatia Bay
1992 Maragos et al. 1994 Fagatele Bay
2002 present study

***Psammocora samoensis* Hoffmeister, 1925**

1985 Birkeland et al. 1987 Rainmaker Hotel
1995 Green et al. 1997 Aūa
1995 Green et al. 1999 Fagatele Bay

***Psammocora* sp.**

1917 Mayor 1924a Aūa
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Rainmaker Hotel

Psammocora* sp. 1 aff. *nierstraszi

2002 present study

***Psammocora superficialis* Gardiner, 1898**
1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay

Order ZOANTHIDEA

Family ZOANTHIDAE

***Palythoa* sp.**
1979 USACE 1980 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay
1985 Sea Engineering 1986 Rainmaker Hotel
2002 Work & Raymeyer 2002 Faga'alu

***Palythoa* sp./spp.**
2002 present study

***Protopalythoa* sp.**
2002 present study

***Zoanthus* sp.**
2002 present study

***Zoanthus* sp.**
1979 USACE 1980 Leloaloa
1985 Sea Engineering 1986 Rainmaker Hotel

***Zoanthus vietnamensis* Pax and Mueller, 1957**
2002 present study

unid. Zoanthidae
2002 present study

Order CORALLIMORPHARIA

Family ACTINODISCIDAE

***Discosoma howesii* (Saville Kent, 1893)**
2002 present study

***Discosoma* sp.**
2002 present study

Subclass CERIANTIPATHARIA

Order ANTIPATHARIA

unid. Anthozoa
2002 present study

Family ANTIPATHIDAE

***Cirrhipathes* sp.**
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay

Phylum PLATYHELMINTHES

unid. Platyhelminthes
2002 present study

Phylum NEMERTEA

unid. Nemertea
2002 present study

Phylum NEMATODA

unid. Nematoda
2002 present study

Phylum ANNELIDA

Class POLYCHAETA

Family POLYNOIDAE

***Lepidonotus* sp.**
2002 present study

unid. Harmothoinae sp.
2002 present study

unid. Lepidonotinae sp.
2002 present study

unid. Polynoidae
2002 present study

Family CHRYSOPETALIDAE

***Chrysopetalum* sp.**
2002 present study

***Palaeonotus* sp.**
2002 present study

Family AMPHINOMIDAE

?*Eurythoe* sp.
2002 present study

?*Pseudoeurythoe* sp.
2002 present study

***Eurythoe* sp.**
2002 present study

***Hermodice* sp.**
2002 present study

***Pherecardia* sp.**
2002 present study

***Pseudoeurythoe* spp.**
2002 present study

Family PHYLLODOCIDAE

?*Paranaitis* sp.
2002 present study

***Phyllodoce* sp.**
2002 present study

Family SYLLIDAE

***Pionosyllis* 1**
2002 present study

Syllidae sp. 1
2002 present study

Syllidae sp. 2
2002 present study

Syllis sp. 1
2002 present study

unid. Syllidae
2002 present study

Family NEREIDIDAE

***Ceratonereis* sp. 1**
2002 present study

***Ceratonereis* sp. 2**
2002 present study

***Ceratonereis* spp.**
2002 present study

***Neanthes* sp.**
2002 present study

***Nereis* sp.**
2002 present study

***Platynereis* sp.**
2002 present study

***Pseudonereis* sp.**
2002 present study

***Pseudonereis* sp.1**
2002 present study

unid. Nereididae
2002 present study

Family GLYCERIDAE

***Glycera* sp.**
2002 present study

Family EUNICIDAE

***Eunice* sp.**

1923 BPBM-R 1371 Pago Pago Harbor

2002 present study

***Lydidice* sp.1**

2002 present study

***Lysidice* sp.2**

2002 present study

***Lysidice* spp.**

2002 present study

***Nematonereis* sp.**

2002 present study

***Nematoneris* sp.**

2002 present study

***Oeninida* sp.**

2002 present study

***Oenone* sp.**

2002 present study

Family LUMBRINERIDAE

***Lumbrineris* sp.**

2002 present study

2002 present study

Family DORVILLEIDAE

***Dorvillea* sp.**

2002 present study

Family SPIONIDAE

***Dipolydora* sp.**

2002 present study

***Polydora* sp.**

2002 present study

***Prionospio* sp.**

2002 present study

unid. Spionidae

2002 present study

Family CIRRATULIDAE

***Caulleriella* sp.**

2002 present study

***Cirratulus* sp.**

2002 present study

***Cirriformia punctata* (Grube, 1856)**

2002 present study

***Cirriformia* sp.**

2002 present study

Family CHAETOPTERIDAE

***Chaetopterus* sp.**

2002 present study

***Mesochaetopterus* sp.**

1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.

***Phyllochaetopterus* sp.**

2002 present study

***Spiochaetopterus* sp.**

2002 present study

Family ORBINIIDAE

***Naineris* sp.**

2002 present study

Family OPHELIIDAE

***Armandia* sp.**

2002 present study

***Polyophthalmus* sp.**
2002 present study
Family CAPITELLIDAE
***Bhawania* sp.**
2002 present study
***Notomastus* sp.**
2002 present study
Family TEREBELLIDAE
?*Nicolea* sp.
2002 present study
***Eupolymnia* sp.**
2002 present study
***Loimia* cf. *ingens* (Grube, 1878)**
2002 present study
***Pista* sp.**
2002 present study
***Streblosoma* sp.**
2002 present study
unid. Terebellidae
2002 present study
Family SABELLIDAE
***Branchiomma* sp.**
2002 present study
***Hypsicomus* sp.**
2002 present study
***Megalomma* sp.**
2002 present study
***Potamilla* sp.**
2002 present study
***Sabella* sp.**
2002 present study
Family SERPULIDAE
***Ficopomatus* sp.**
2002 present study
***Salmacina dysteri* (Huxley, 1855)** **Introduced**
2002 present study
***Spirobranchus giganteus* Pallas, 1766**
2002 present study
***Spirobranchus* sp.**
2002 present study
***Temporaria* sp.**
2002 present study
unid. Sepulidae
2002 present study
Family EUPHROSINIDAE
***Euphrosine* sp.**
2002 present study
Family POECILOCHAETIDAE
***Poecilochaetus* sp.**
2002 present study
Class OLIGOCHAETA
unid. Oligochaeta
2002 present study

Phylum MOLLUSCA
Class GASTROPODA
Subclass PROSOBRANCHIA
Order ARCHAEOGASTROPODA

Family HALIOTIDAE

***Haliotis* sp.**

1985 Birkeland et al. 1987 Fagatele Bay

2002 present study

Family FISSURELLIDAE (DIODORINAE)

***Diodora* sp.**

2002 present study

Family FISSURELLIDAE (EMARGINULINAE)

***Emarginula montrouzieri* Souverbie, 1872**

2002 present study

Family PATELLIDAE

***Cellana pricei* Powell, 1973**

2002 present study

***Cellana* sp.**

1985 Sea Engineering 1986 (as *Patella* sp.) Rainmaker Hotel

***Scutellaster flexuosa* Reeve, 1854**

2002 present study

unid. Patellidae

2002 present study

Family STOMATELLIDAE

?*Stomatia* sp.

2002 present study

***Synaptocochlea* sp. 1**

2002 present study

***Synaptocochlea* sp. 2**

2002 present study

***Synaptocochlea* sp. 3**

2002 present study

unid. Stomatellidae

2002 present study

Family TROCHIDAE (ENCYCLINAE)

***Euchelus atratus* (Gmelin, 1791)**

2002 present study

***Gibbula marmorea* (Pease, 1861)**

2002 present study

Family TROCHIDAE (TROCHINAE)

***Clanculus atropurpureus* (Gould, 1849)**

1985 Birkeland et al. 1987 Fagasā Bay

***Clanculus clanguloides* (Wood, 1818)**

1985 Birkeland et al. 1987 Fagasā Bay

1985 Birkeland et al. 1987 Fagatele Bay

***Clanculus denticulatus* (Gray, JE, 1827)**

2002 present study

***Clanculus* sp.**

2002 present study

***Monilea philippiana* Dunker**

1985 Birkeland et al. 1987 Fagasā Bay

***Monilea* sp.**

2002 present study

***Tectus pyramis* Born, 1778**

1985 Birkeland et al. 1987 Fagatele Bay

2002 present study

***Trochus conus* Gmelin,1791**

1985 Birkeland et al. 1987 Fagatele Bay

***Trochus histrio* Reeve, 1848**

2002 present study

***Trochus incrassatus* Lamarck, 1822**

2002 present study

***Trochus laciniatus* Reeve, 1861**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay
***Trochus niloticus* Linnaeus, 1758** **Introduced**
2002 present study (dead shell)
***Trochus ochroleucus* Gmelin, 1791**
1985 Birkeland et al. 1987 Fagatele Bay
***Trochus pyramis* Born,1778**
1985 Birkeland et al. 1987 Fagasā Bay
2002 present study
***Trochus* sp. 1**
2002 present study
***Trochus* sp. 2**
2002 present study
***Trochus stellatus* Gmelin, 1791**
2002 present study
unid. Trochidae
2002 present study

Family TURBINIDAE (COLLONINAE)

***Astralium rhodostoma* (Lamarck, 1822)**
2002 present study
***Leptothyra* sp.**
1985 Birkeland et al. 1987 Fagatele Bay
***Leptothyra verruca* (Gould, 1845)**
2002 present study

Family TURBINIDAE (TURBININAE)

***Astraea rhodostoma* (Lamarck, 1822)**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
***Turbo argyrostomus* Linnaeus, 1758**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Turbo cinereus* Born, 1778**
1985 Birkeland et al. 1987 Fagatele Bay
***Turbo crassa* Wood, 1829**
2002 present study
***Turbo crassus* Wood, 1829**
1985 Birkeland et al. 1987 Fagatele Bay
***Turbo petholatus* Linnaeus, 1758**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Turbo setosus* Gmelin, 1791**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Turbo* sp.**
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay
1979 USACE 1980 Aūa
1985 Sea Engineering 1986 Rainmaker Hotel

Family CYCLOSTREMATIDAE

***Liotina loculosa* Gould 1862**
1985 Birkeland et al. 1987 Fagasā Bay

Family NERITIDAE (NERITINAE)

?*Nerita* (*Ritena*) *undata* Linnaeus, 1758
1985 Sea Engineering 1986 (as ?*Ritena undata*) Rainmaker Hotel
?*Nerita* sp.
2002 present study
***Nerita albicilla* Linnaeus, 1758**
2002 present study

***Nerita argus* Récluz, 1841**
1985 Birkeland et al. 1987 Fagasā Bay
***Nerita* cf. *picea* (Récluz, 1841)**
2002 present study
***Nerita incerta* Philippi, 1844**
2002 present study
***Nerita morio* Linnaeus, 1758**
1985 Birkeland et al. 1987 Fagasā Bay
***Nerita plicata* Linnaeus, 1758**
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
2002 present study
***Nerita polita* Linnaeus, 1758**
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
2002 present study
***Nerita* sp.**
1974 Randall & Devaney 1974 Vatia Bay
***Puperita bensoni* (Récluz, 1850)**
1985 Birkeland et al. 1987 Fagatele Bay

Order NEOTAENIOGLOSSA

Suborder DISCOPODA

Family CERITHIIDAE

?*Cerithium zebrum* Kiener, 1841
2002 present study
***Cerithium alveolus* Hombron & Jacquinot, 1854**
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
***Cerithium columna* Sowerby, 1834**
1985 Birkeland et al. 1987 Fagatele Bay
***Cerithium echinatum* Houbrick, 1992**
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
***Cerithium nesioticum* Pilsbry & Vanatta, 1905**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
***Rhinoclavis articulata* (Adams & Reeve, 1850)**
1985 Birkeland et al. 1987 Fagatele Bay
***Rhinoclavis aspera* (Linnaeus, 1758)**
2002 present study
***Rhinoclavis sinensis* (Gmelin, 1791)**
2002 present study

Family MODULIDAE

***Modulus tectum* (Gmelin, 1791)**
1985 Birkeland et al. 1987 Fagasā Bay

Family PLANAXIDAE

***Hinea fasciata* (Pease, 1868)**
2002 present study
***Planaxis sulcatus* (Born,1778)**
1985 Birkeland et al. 1987 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay

Family TURRITELLIDAE

unid. Turritellidae
2002 present study

Family LITTORINIDAE (LITTORININAE)

***Littoraria coccinea* (Gmelin, 1791)**
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Littoraria scabra* (Linnaeus, 1758)**
2002 present study

***Littoraria* sp.**
1974 Randall & Devaney 1974 (as *Littorina* ap.) Vatia Bay
1990 Sea Engineering/AECOS 1991 Atuʻu-Leasi Pt.
2002 present study

***Littoraria undulata* (Gray, 1839)**
1985 Birkeland et al. 1987 Fagasā Bay
2002 present study

***Nodilittorina* sp.**
2002 present study

Family CAECIDAE

unid. Caecidae
2002 present study

Family RISSOIDAE (RISSOININAE)

?*Rissoina* sp.
2002 present study

***Rissoina* (*Apataxia*) *cerithiiformis* Tryon, 1887**
2002 present study

***Rissoina ambigua* (Gould, 1849)**
1985 Birkeland et al. 1987 Fagasā Bay

Family STROMBIDAE

***Lambis scorpius* (Linnaeus, 1758)**
2002 present study

***Lambis truncata* (Kiener, 1843)**
1985 Birkeland et al. 1987 Fagatele Bay

***Strombus* cf. *luhuanus* Linnaeus, 1758**
2002 present study

***Strombus gibberulus* Linnaeus, 1758**
2002 present study

***Strombus lentiginosus* Linnaeus, 1758**
2002 present study

***Strombus luhuanus* Linnaeus, 1758**
2002 present study

Family HIPPONICIDAE

***Hipponix* sp.**
2002 present study

***Sabia conica* (Schumacher, 1817)**
1985 Birkeland et al. 1987 Fagatele Bay

Family VERMETIDAE

unid. Vermetidae
2002 present study

Family CYPRAEIDAE

***Cypraea annulus* Linnaeus, 1758**
1979 USACE 1980 Aūa
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1990 Sea Engineering/AECOS 1991 Atuʻu-Leasi Pt.
2002 present study

***Cypraea arabica* Linnaeus, 1758**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Cypraea asellus* Linnaeus, 1758**
2002 present study

***Cypraea caputserpensis* Linnaeus, 1758**
2002 present study
***Cypraea caputserpentis* Linnaeus, 1758**
1985 Birkeland et al. 1987 Fagatele Bay
***Cypraea carneola* Linnaeus, 1758**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Cypraea childreni* Gray, 1825**
2002 present study
2002 present study
***Cypraea cicerula* Linnaeus, 1758**
1985 Birkeland et al. 1987 Fagasā Bay
***Cypraea cribraria* (Linnaeus, 1758)**
2002 present study
***Cypraea depressa* (Gray, 1846)**
2002 present study
***Cypraea eglantina* Duclos, 1833**
2002 present study
***Cypraea erosa* Linnaeus, 1758**
2002 present study
***Cypraea isabella* Linnaeus, 1758**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Cypraea labrolineata* Gaskoin, 1849**
2002 present study
***Cypraea lynx* Linnaeus, 1758**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Cypraea moneta* Linnaeus, 1758**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Sea Engineering 1986 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
2002 present study
***Cypraea nucleus* Linnaeus, 1758**
1985 Birkeland et al. 1987 Fagasā Bay
***Cypraea poraria* Linnaeus, 1758**
2002 present study
***Cypraea* sp. (juvenile)**
2002 present study
***Cypraea testudinaria* Linnaeus, 1758**
1985 Birkeland et al. 1987 Fagatele Bay

Family LAMELLARIIDAE

***Coriocella nigra* Blainville, 1824)**
2002 present study

Family BURSIDAE

***Bursa bubo* Linneus,1758**
1985 Birkeland et al. 1987 Fagatele Bay
***Bursa bufonia* (Gmelin, 1791)**
1985 Birkeland et al. 1987 Fagatele Bay
***Bursa cruentata* Sowerby, 1841**
1985 Birkeland et al. 1987 Fagasā Bay
2002 present study
***Bursa mammata* (Röding, 1798)**
1985 Birkeland et al. 1987 Fagatele Bay

***Bursa rhodostoma* Sowerby, 1841**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
2002 present study
Family CASSIDAE (PHALINAE)
***Casmaria erinaceus* (Linnaeus, 1758)**
1985 Birkeland et al. 1987 Rainmaker Hotel
Family RANELLIDAE (CYMATIINAE)
***Charonia tritonis* (Linnaeus, 1767)**
1985 Birkeland et al. 1987 Fagatele Bay
***Cymatium* (*Septa*) ?*gemmatum* (Reeve, 1844)**
2002 present study
***Cymatium* (*Septa*) *aquatile* (Reeve, 1844)**
2002 present study
***Cymatium* (*Septa*) *pileare* (Linnaeus, 1758)**
2002 present study
***Cymatium* (*Septa*) *rubeculum* (Linnaeus, 1758)**
1985 Birkeland et al. 1987 Fagatele Bay
***Cymatium* sp.**
2002 present study
Family RANELLIDAE (RANELLINAE)
***Gyrineum* sp.**
2002 present study
***Gyrineum gyrinum* (Linnaeus, 1758)**
2002 present study
Suborder PTENOGLOSSA
Family TRIPHORIDAE (INIFORINAE)
***Iniforis* sp.**
2002 present study
Family TRIPHORIDAE (MASTONIINAE)
***Mastonia* ?*cingulifera* (Pease, 1861)**
2002 present study
***Mastonia rubra* (Hinds, 1843)**
2002 present study
***Mastonia* sp.**
2002 present study
unid. Triphoridae
2002 present study
Family TRIPHORIDAE (METAXIINAE)
***Metaxia* sp.**
2002 present study
Family EULIMIDAE
***Stilifer linckiae* Sarasin & Sarasin, 1887**
2002 present study
Order NEOGASTROPODA
Family BUCCINIDAE
?*Cantharus* sp.
2002 present study
***Cantharus undosus* (Linnaeus, 1758)**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Engina alveolata* (Kiener, 1836)**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Engina incarnata* (Deshayes, 1834)**
1985 Birkeland et al. 1987 Fagatele Bay
***Engina mendicaria* (Linnaeus, 1758)**
2002 present study

***Engina zonalis* Lamarck, 1822**
2002 present study
***Prodotia iostomus* (Gray in Griffiths & Pidgeon, 1834)**
2002 present study
unid. Buccinidae
2002 present study

Family COLUBRARIIDAE

***Colubraria* sp.**
2002 present study

Family COLUMBELLIDAE

?*Anachis misera* (Sowerby, 1844)
2002 present study
Columbellidae sp. 1
2002 present study
Columbellidae sp. 2
2002 present study
Columbellidae sp. 3
2002 present study
Columbellidae sp. 4
2002 present study
***Euplica* sp.**
2002 present study
***Metanachis marquesa* (Gaskoin, 1852)**
2002 present study
***Mitrella* sp.**
2002 present study
***Mitrella albina* (Kiener, 1841)**
1985 Birkeland et al. 1987 Fagatele Bay
***Mitrella marquesa* (Gaskoin, 1852)**
1985 Birkeland et al. 1987 Fagasā Bay
***Mitrella* sp.**
2002 present study
***Pyrene deshayesii* (Crosse, 1859)**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
***Pyrene flava* (Bruguière, 1789**
1985 Birkeland et al. 1987 Fagasā Bay
***Pyrene testudinaria* (Link, 1807)**
2002 present study
***Pyrene turturina* (Lamarck, 1822)**
1985 Birkeland et al. 1987 Fagatele Bay
unid. Columbellidae
2002 present study
***Zafra* sp.**
2002 present study

Family CORALLIOPHILIDAE

***Coralliophila* sp.**
2002 present study
***Coralliophila madreporaria* (Sowerby, 1824)**
2002 present study
***Coralliophila monodonta* (de Blainville, 1832)**
1985 Birkeland et al. 1987 (as *Quoyula monodonta*) Fagatele Bay
***Coralliophila neritoidea* Lamarck, 1816**
2002 present study
***Coralliophila violacea* (Kiener, 1836)**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

cf. *Leptoconchus lamarckii* Deshayes, 1863
2002 present study
***Quoyula madreporarum* (Sowerby, 1834)**
2002 present study
Family FASCIOLARIIDAE
?*Peristernia* cf. *constricta* (Koch, 1845)
2002 present study
***Latirolagena smaragdula* (Linnaeus, 1758)**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Latirus polygonus* (Gmelin, 1791)**
2002 present study
***Latirus polygonus barclayi* Reeve, 1847**
1985 Birkeland et al. 1987 Fagatele Bay
***Latirus smaragdula* Linnaeus, 1758**
2002 present study
***Peristernia fastigium* (Reeve, 1847)**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Peristernia incarnata* (Kiener, 1840)**
2002 present study
***Peristernia nassatula* (Lamarck, 1822)**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Peristernia* sp. 1**
2002 present study
***Peristernia* sp. 2**
2002 present study
***Peristernia* sp. 3**
2002 present study
***Pleuroploca filamentosa* (Röding, 1798)**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
2002 present study
***Pleuroploca* sp.**
2002 present study
unid. Fasciolaridae
2002 present study
Family MURICIDAE
***Chicoreus brunneus* (Link, 1807)**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Chicoreus* sp.**
2002 present study
***Cronia margariticola* (Broderip, 1833)**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Cronia* sp.**
2002 present study
Family NASSARIIDAE
***Nassarius glans* (Linnaeus, 1758)**
1985 Birkeland et al. 1987 Rainmaker Hotel
***Nassarius quadrasi* (Hidalgo, 1904)**
2002 present study
***Niotha albescens* (Dunker, 1846)**
2002 present study

Family THAIDIDAE

***?Morula* sp.**
2002 present study

***?Thais* sp.**
2002 present study

***Drupa* (*Drupa*) *morum* Röding, 1798**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 (as *Drupa morum*) Fagatele Bay

***Drupa* (*Drupa*) *ricina* (Linnaeus, 1758)**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 (as *Drupa ricinus*) Fagatele Bay

***Drupa* (*Drupina*) *grossularia* (Röding, 1798)**
1985 Birkeland et al. 1987 Fagatele Bay

***Drupa* (*Ricinella*) *rubusidaeus* Röding, 1798**
1985 Birkeland et al. 1987 (as *Drupa rubusidaeus*) Fagatele Bay

Drupa ?rubusidaeus (juvenile) **Röding, 1798**
2002 present study

***Drupa grossularia* (Röding, 1798)**
2002 present study

***Drupa morum* Röding, 1798**
1985 Sea Engineering 1986 Rainmaker Hotel
2002 present study

***Drupa ricina* (Linnaeus, 1758)**
1985 Sea Engineering 1986 Rainmaker Hotel
2002 present study

***Drupa rubrosidaeus* Röding, 1798**
2002 present study

***Drupella cornus* (Roding, 1798)**
2002 present study

***Drupella elata* Blainville, 1832**
1985 Birkeland et al. 1987 Fagatele Bay

***Drupella* sp.**
2002 present study

***Habromorula lepida* Houart, 1994**
2002 present study

***Habromorula* sp.**
2002 present study

***Mancinella hippocastanus* (Linnaeus, 1758)**
2002 present study

***Mancinella tuberosa* (Röding, 1798)**
2002 present study

***Morula biconica* (Blainville, 1832)**
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay

***Morula dumosa* (Conrad, 1837)**
1985 Birkeland et al. 1987 Fagatele Bay

***Morula granulata* (Duclos, 1832)**
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Morula nodicostata* (Pease, 1868)**
1985 Birkeland et al. 1987 Fagatele Bay

***Morula* sp.**
2002 present study

***Morula spinosa* (Adams & Adams, 1853)**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Morula squamosa* Pease, 1867**
1985 Birkeland et al. 1987 Fagatele Bay

***Morula uva* (Röding, 1798)**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Nassa francolina* (Kuroda, 1953)**
2002 present study

***Thais aculeata* Deshayes, 1844**
1985 Birkeland et al. 1987 Fagatele Bay

***Thais armigera* (Link, 1807)**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Thais tuberosa* (Röding, 1798)**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay

Family COSTELLARIIDAE

***Costellaria* sp. 1**
2002 present study

***Costellaria* sp. 2**
2002 present study

***Costellaria cadaverosa* (Reeve, 1844)**
2002 present study

***Costellaria exasperata* (Gmelin, 1791)**
2002 present study

***Costellaria semifasciata* (Lamarck, 1811)**
2002 present study

***Vexillum* (*Costellaria*) ?*diutenerum* (Hervier, 1897)**
2002 present study

***Vexillum* (*Pusia*) *cancellarioides* (Anton, 1839)**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 (as Pusia cancellarioides) Fagatele Bay
2002 present study

***Vexillum* (*Pusia*) *lautum* (Reeve, 1845)**
1985 Birkeland et al. 1987 Fagatele Bay

***Vexillum* (*Pusia*) *suavis* (Souverbie, 1875)**
1985 Birkeland et al. 1987 (as Pusia suavis) Fagasā Bay

***Vexillum* (*Pusia*) *unifascialis* (Lamarck, 1811)**
1985 Birkeland et al. 1987 Fagatele Bay

***Vexillum exasperatum* (Gmelin, 1791)**
2002 present study

unid. Costellariidae
2002 present study

Family HARPIDAE

Harpidae (juvenile)
2002 present study

Family MITRIDAE (IMBRICARIINAE)

***Imbricaria olivaeformis* (Swainson, 1821)**
2002 present study

***Subcancilla flammea* (Quoy & Gaimard, 1833)**
2002 present study

Family MITRIDAE

?*Nebularia doliolum* Swainson
2002 present study

***Cancilla peasei* (Dohrn, 1860)**
2002 present study

***Cancilla* sp.**
2002 present study

***Domiporta filaris* (Linnaeus, 1771)**
2002 present study

***Mitra (Dibaphus) multiplicata* Pease, 1865**
1985 Birkeland et al. 1987 Fagatele Bay
***Mitra (Mitra) coffea* Schubert & Wagner, 1829**
1985 Birkeland et al. 1987 Fagatele Bay
***Mitra (Nebularia) contracta* Swainson, 1820**
1985 Birkeland et al. 1987 Fagatele Bay
***Mitra (Nebularia) cucumerina* Lamarck, 1811**
1985 Birkeland et al. 1987 Fagatele Bay
***Mitra (Nebularia) fraga* Quoy & Gaimard, 1833**
1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 (as *Nebularia fraga*) Fagatele Bay
***Mitra (Nebularia) tabanula* Lamarck, 1811**
2002 present study
***Mitra (Strigatella) acuminata* Swainson, 1824**
1985 Birkeland et al. 1987 Fagatele Bay
***Mitra (Strigatella) assimilis* Pease, 1868**
2002 present study
***Mitra (Strigatella) fastigium* (Reeve, 1845)**
1985 Birkeland et al. 1987 Fagatele Bay
***Mitra (Strigatella) litterata* (Lamarck, 1811)**
1985 Birkeland et al. 1987 Fagatele Bay
***Mitra* sp.**
1985 Sea Engineering 1986 Rainmaker Hotel
***Nebularia chrysalis* Reeve, 1844**
2002 present study
***Nebularia chrysostoma* Broderip, 1836**
2002 present study
***Strigatella decurtata* Reeve, 1844**
2002 present study
***Swainsonia casta* (Gmelin, 1791)**
2002 present study
unid. Mitridae
2002 present study
***Zierliana woldemarii* (Kiener, 1838)**
2002 present study

Family TURBINELLIDAE

***Vasum ?turbinellum* (Linnaeus, 1758)**
2002 present study
***Vasum ceramicum* (Linnaeus, 1758)**
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagasā Bay
2002 present study
***Vasum turbinellum* (Linnaeus, 1758)**
2002 present study

Family CONIDAE

***Conus ?circumactus* Iredale, 1929**
2002 present study
***Conus ?imperialis* Linnaeus, 1758**
2002 present study
Conus ?moreleti/balteatus
2002 present study
***Conus ?sponsalis* (juvenile) Hwass, 1792**
2002 present study
***Conus chaldeus* (Röding, 1798)**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Conus coronatus* Gmelin, 1791**
1985 Birkeland et al. 1987 Fagatele Bay
***Conus distans* Hwass, 1792**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Conus ebraeus* Linnaeus, 1758**

1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
2002 present study

***Conus eburneus* Hwass, 1792**

2002 present study

***Conus flavidus* Lamarck, 1810**

1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Conus frigidus* Reeve, 1848**

2002 present study

***Conus geographus* Linnaeus, 1758**

2002 present study

***Conus glans* Hwass, 1792**

1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Conus imperialis* Linnaeus, 1758**

1985 Birkeland et al. 1987 Fagatele Bay

***Conus lividus* Hwass, 1792**

1985 Birkeland et al. 1987 Fagatele Bay
1985 Sea Engineering 1986 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
2002 present study

***Conus miles* Linnaeus, 1758**

1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1985 Sea Engineering 1986 Rainmaker Hotel
2002 present study

***Conus miliaris* Hwass, 1792**

1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Conus nanus* Sowerby, 1833**

2002 present study

***Conus planorbis* Hwass, 1792**

2002 present study

***Conus pulicarius* Hwass, 1792**

2002 present study

***Conus rattus* Hwass, 1792**

1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Conus sanguinolentus* Quoy & Gaimard, 1834**

1985 Birkeland et al. 1987 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Conus* sp.**

1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
2002 present study

***Conus sponsalis* Hwass, 1792**

1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Conus striatus* Linnaeus, 1758**

1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Conus terebra* Born, 1778**

1985 Birkeland et al. 1987 Fagatele Bay

***Conus vexillum* Gmelin, 1791**

1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

Family TEREBRIDAE

***Terebra ?jenningsi* Burch, 1965**
2002 present study

***Terebra aereolata* (Link, 1807)**
2002 present study

***Terebra affinis* Gray, 1834**
2002 present study

***Terebra babylonia* Lamarck, 1822**
2002 present study

***Terebra columellaris* Hinds, 1844**
2002 present study

***Terebra crenulata* (Linnaeus, 1758)**
2002 present study

***Terebra dimidiata* (Linnaeus, 1758)**
2002 present study

***Terebra guttata* (Röding, 1798)**
2002 present study

***Terebra maculata* (Linnaeus, 1758)**
2002 present study

***Terebra subulata* (Linnaeus, 1767)**
2002 present study

unid. Terebridae
2002 present study

Family TURRIDAE (DRILLIINAE)

?*Inquisitor* sp.
2002 present study

***Turridrupa cerithina* (Anton, 1838)**
1985 Birkeland et al. 1987 Fagatele Bay

unid. Turridae
2002 present study

Order HETEROSTROPHA

Family ARCHITECTONICIDAE

unid. Architectonicidae
2002 present study

Subclass OPISTOBRANCHIA

Order CEPHALASPIDEA

Family ACTEONIDAE

***Acteon* sp.**
2002 present study

Family ATYIDIDAE

***Atys* ?*cylindrica* (juvenile). (Helbling, 1779)**
2002 present study

***Atys* sp.**
2002 present study

Order SACOGLOSSA

Family PLAKOBRANCHIDAE

***Elysia* sp.**
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.

Order NUDIBRANCHIA

Family CHROMODORIDIDAE

***Risbeca tyroni* (Garrett, 1873)**
2002 present study

Family PHYLLIDIIDAE

***Phyllidia* sp.**
2002 present study

***Phyllidiella pustulosa* (Cuvier, 1804)**
2002 present study

Family DORIDIDAE (KENTRODORIDINAE)

***Jorunna funebris* (Kelaart, 1858)**
2002 present study

Subclass PULMONATA

Order BASOMMATOPHORA

Family MELAMPIDAE

***Laemodonta octanfracta* (Jonas, 1845)**
2002 present study

Family SIPHONARIIDAE

***Siphonaria (Heterosiphonaria)* sp.**
2002 present study

***Siphonaria* sp.**
1979 USACE 1980 Fagasā Bay
1985 Sea Engineering 1986 Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.

UNID. GASTROPODA

unid. Micromollusc sp. 1
2002 present study

unid. Micromollusc sp. 2
2002 present study

unid. Micromollusc sp. 3
2002 present study

unid. Micromollusc sp. 4
2002 present study

unid. Micromollusc sp. 5
2002 present study

Class BIVALVIA

Family MYTILIDAE

***Brachidontes* spp.**
2002 present study

***Lithophaga nigra* (d'Orbigny, 1842)**
2002 present study

***Lithophaga* sp.**
2002 present study

***Musculus* sp.**
2002 present study

***Rhomboidella malaccana* Ockelmann, 1983**
2002 present study

***Septifer cumingi* complex**
2002 present study

Family ARCIDAE (ANADARINAE)

***Anadara* sp. (juv)**
2002 present study

***Bentharca* sp. 1**
2002 present study

Family ARCIDAE (ARCINAE)

***Acar plicata* (Dillwyn, 1817)**
2002 present study

***Arca avellana* Lamarck, 1819**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Barbatia amygdalumtostum* (Röding 1798)**
2002 present study

***Barbatia parva* (Sowerby, 1833)**
2002 present study

***Barbatia* sp.**
2002 present study

Family ISOGNOMONIDAE

***Isognomon* cf. *californicum* (Conrad, 1837)**
1985 Sea Engineering 1986 Rainmaker Hotel

***Isognomon* (juvenile)**
2002 present study

***Isognomon nucleus* (Lamarck, 1819)**
2002 present study

***Isognomon perna* (Linnaeus, 1767)**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Isognomon* sp.**
2002 present study

Family MALLEIDAE

***Malleus (Malrufundus)* cf. *regula* (Forsskål, 1775)**
2002 present study

***Malvufnudus nuttalli* complex**
2002 present study

***Vulsella* sp.**
2002 present study

Family PTERIIDAE

***Pinctada* sp.**
2002 present study

Family PINNIDAE

***Pinna* sp.**
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.

***Streptopinna saccata* (Linnaeus, 1758)**
2002 present study

Family LIMIDAE

***Ctenoides annulata* (Lamarck, 1819**
2002 present study

***Lima vulgaris* Link, 1807**
2002 present study

***Limaria* sp.**
2002 present study

Family OSTREIDAE

***Dendostrea sandvicensis* (Sowerby, 1871)**
2002 present study

Ostreidae sp.
2002 present study

Ostreidae sp. (juvenile)
2002 present study

***Saccostrea* sp.**
2002 present study

***Saccostrea*?sp. (**(juvenile)**)**
2002 present study

Family PLICATULIDAE

***Plicatula* ?*australis* Lamarck, 1819**
2002 present study

Family PECTINIDAE

Chlamys sp.
2002 present study

***Pasachinnites coruscans* (Hinds, 1845)**
2002 present study

Family PROPEAMUSIIDAE

***Chlamydella incubata* complex**
2002 present study

Family SPONDYLIDAE

***Spondylus* sp.**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

Family ANOMIIDAE

***Anomia nobilis* Reeve, 1859** **Introduced**
2002 present study

***Anomia* sp.**
2002 present study

Family CHAMIDAE

***Chama asperella* Lamarck, 1819**
2002 present study

***Chama brassica* Reeve, 1847**
2002 present study

***Chama pacifica* Broderip, 1835** **Introduced**
2002 present study

***Chama* sp.**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

Family GASTROCHAENIDAE

***Gastrochaena* sp.**
2002 present study

Family VENERIDAE

?*Irus* sp.
2002 present study

***Irus* sp.**
2002 present study

***Lioconcha castrensis* Linnaeus, 1758**
2002 present study

***Tridacna maxima* (Röding, 1798)**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Tridacna* sp.**
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.

***Tridacna squamosa* Lamarck, 1819**
2002 present study

Family PETRICOLIDAE

***Petricola lapicida* (Gmelin, 1791)**
2002 present study

Family GALEOMMATIDAE

Galeommatidae sp. 1
2002 present study

Galeommatidae sp. 2
2002 present study

Galeommatidae sp. 3
2002 present study

Family CARDIIDAE

***Fragum fragum* (Linnaeus, 1758)**
2002 present study

Family CARDITIDAE

***Cardita variegata* (Bruguière, 1792)**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Cardita variegata*? (juvenile) Bruguière 1792**
2002 present study

***Vasticardium orbita philippinense* (Hedley, 1899)**
2002 present study

Family SEMELIDAE

***Lonoa hawaiensis* Dall, Bartsch, & Rehder, 1938**
2002 present study

Family TELLINIDAE

***Pinguitellina robusta* Hanley, 1844**

2002 present study

***Scutarcopagia scobinata* (Linnaeus, 1758)**

1985 Birkeland et al. 1987 Fagatele Bay

2002 present study

***Tellina crucigera* Lamarck, 1818**

2002 present study

Family TRAPEZIIDAE

***Trapezium oblongum* (Linnaeus, 1758)**

1985 Birkeland et al. 1987 Fagatele Bay

Class CEPHALOPODA

Order TEUTHOIDEA

Family LOLIGINIDAE

***Sepioteuthis* sp.**

1985 Birkeland et al. 1987 Fagatele Bay

Class POLYPLACOPHORA

Order CHITONIDEA

unid. Chitonidae

2002 present study

Family CRYPTOPLACIDAE

***Cryptoplax larvaeformis* (de Blainville & Burrow 1815)**

2002 present study

***Cryptoplax* sp.**

2002 present study

Phylum ARTHROPODA

Class MAXILLOPODA

Subclass CIRRIPEDIA

Order THORACICA

Family BALANIDAE

***Balanus amphitrite* (Darwin, 1854)** **Introduced**

2002 present study

***Balanus reticulatus* Utinomi, 1967** **Introduced**

2002 present study

***Balanus trigonus* Darwin, 1854**

2002 present study

Family CHTHAMALIDAE

***Chthamalus* sp. A , cf. *malayensis*? Pilsbry, 1916**

2002 present study

***Chthamalus* sp. B, *challengeri* group**

2002 present study

Family LEPADIDAE

***Capitulum mitella* Linnaeus, 1758**

2002 present study

***Lithotrya nicobarica* Reinhardt 1850**

2002 present study

Family POECILASMATIDAE

***Poecilasma crassa* Gray, 1848**

2002 present study

Family VERRUCIDAE

***Verruca cookei* Pilsbry, 1928**

2002 present study

Family TETRACLITIDAE

***Acasta* sp.**

2002 present study

Subclass COPEPODA
Family UNID. COPEPODA
unid. Copepoda
2002 present study
Class OSTRACODA
Family UNID. OSTRACODA
***Asteropterygion* n. sp.**
2002 present study
***Paravargula trifax* Kornicker, 1991**
2002 present study
Order PODOCOPINA
Family CYPRIDIDAE
***Cypridina* n. sp.**
2002 present study
Class MALACOSTRACA
Subclass HOPLOCARIDA
Order STOMATOPODA
Family GONODACTYLIDAE
***Cymo melanodactylus* Milne Edwards, 1873**
1924 BPBM-S 1680 Pago Pago Harbor
***Gonodactylus chiragra* (Fabricius, 1781)**
1924 BPBM-S 1682 Pago Pago Harbor
Family UNID. STOMATOPODA
Stomatopod (juvenile)
2002 present study
Subclass EUMALACOSTRACA
Superorder PERACARIDA
Order AMPHIPODA
Suborder GAMMARIDEA
Family AMPHILOCHIDAE
***Amphilochus menehune* Barnard, 1970**
2002 present study
Family AMPITHOIDAE
***Ampithoe* sp.**
2002 present study
Family ANAMIXIDAE
***Paranamixis madagascarensis* Ledeyer, 1982**
2002 present study
Family AORIDAE
***Bemlos* ?*intermedius* Schellenberg, 1938**
2002 present study
***Bemlos virgus* Myers, 1985** **Cryptogenic**
2002 present study
***Bemlos* sp.**
2002 present study
Family COLOMASTIGIDAE
***Colomastix lunalilo* Barnard, 1970**
2002 present study
***Colomastix* sp.1**
2002 present study
Family COROPHIIDAE
***Corophium insidiosum*? Crawford, 1937** **Introduced**
2002 present study
***Corophium* sp.2**
2002 present study
***Ericthonius brasiliensis* (Dana, 1853)** **Introduced**
2002 present study

Family DEXAMINIDAE

***Paradexamine* sp.1**
2002 present study

Family ISAEIDAE

***Gammaropsis atlantica* Stebbing, 1888**
2002 present study

***Gammaropsis* sp.1**
2002 present study

***Photis* sp.1**
2002 present study

Family ISCHYROCERIDAE

***Jassa* sp.1**
2002 present study

***Leucothoe micronesiae* Barnard, 1965** **Introduced**
2002 present study

***Leucothoe* sp.1**
2002 present study

***Leucothoe* sp.2**
2002 present study

***Leucothoides pottsi* Shoemaker, 1933**
2002 present study

***Notopoma* sp.**
2002 present study

Family LEUCOTHOIDAE

***Leucothoella bannwarthi* Schellenberg, 1928**
2002 present study

Family LILJEBORGIIDAE

***Liljeborgia* ?*laniloa* Barnard, 1970**
2002 present study

Family MELITIDAE

***Elasmopus pseudoaffinis* Schellenberg, 1938**
2002 present study

***Elasmopus* sp.1**
2002 present study

***Elasmopus* sp.2**
2002 present study

***Elasmopus* sp.3**
2002 present study

***Elasmopus* sp.4**
2002 present study

***Elasmopus* sp.5**
2002 present study

***Maera? pacifica* Schellenberg, 1938**
2002 present study

***Maera* sp.**
2002 present study

***Mallacoota insignis* (Chevreux, 1901)**
2002 present study

Family PHLIANTIDAE

***Pereionotus alaniphlias* Barnard, 1970**
2002 present study

Family PLEUSTIDAE

***Tepidopleustes* ?*honomu* (Barnard, 1970)**
2002 present study

Family PODOCERIDAE

***Podocerus* sp.1**
2002 present study

Family STENOTHOIDAE

***Stenothoe valida* Dana, 1853** **Cryptogenic**

2002 present study

Family TALITROIDAE

***Hyale* sp.1**

2002 present study

Order ISOPODA

Suborder GNATHIIDEA

Family GNATHIIDAE

***Gnathia* n.sp.**

2002 present study

Suborder ANTHURIDEA

Family ANTHURIDAE

***Mesanthura* sp.**

2002 present study

***Panathura* sp.**

2002 present study

***Pendanthura* sp.**

2002 present study

Family EXPANATHURIDAE

***Eisothistos* n.sp.**

2002 present study

Suborder FLABELLIFERA

Family CIROLANIDAE

***Metacirolana* sp.**

2002 present study

Family LIMNORIIDAE

***Limnoria* sp.**

2002 present study

Family SPHAEROMATIDAE

***Hadromastax* sp.**

2002 present study

***Neonaesa rugosa* Harrison & Holdich, 1982**

2002 present study

Sphaeromatidae n. gen.

2002 present study

Suborder ASELLOTA

Family JANIRIDAE

***Carpias* sp.**

2002 present study

Family JOEROPSIDAE

***Joeropsis* sp.**

2002 present study

Family STENETRIIDAE

***Mizothenar* sp.**

2002 present study

***Stenetrium* sp.**

2002 present study

Suborder ONISCIDEA

Family LIGIIDAE

***Ligia exotica* Roux, 1828** **Introduced**

2002 present study

Order TANAIDACEA

Suborder TANAIDOMORPHA

Family TANAIDAE

unid. Tanaidae

2002 present study

Superorder EUCARIDA
Order DECAPODA
Suborder PLEOCYEMATA
Infraorder STENOPODIDEA
Family STENOPODIDAE

***Stenopus hispidus* (Olivier, 1811)**
2002 present study

Infraorder CARIDEA
Family PALAEMONIDAE (PONTONIINAE)

***Periclimenes* sp.**
2002 present study

Family ALPHEIDAE

***Alpheus bucephalus* Coutière, 1905**
2002 present study

***Alpheus collumianus* Stimpson, 1860**
2002 present study

***Alpheus gracilipes* Stimpson, 1860**
2002 present study

***Alpheus obesomanus* Dana, 1852**
2002 present study

***Alpheus pachychirus* Stimpson, 1861**
2002 present study

***Alpheus paralcyone* Coutière, 1905**
2002 present study

***Alpheus parvirostris* Dana, 1852**
2002 present study

***Synalpheus coutierei* Banner, 1953**
2002 present study

***Synalpheus gracilirostris* DeMan, 1910**
2002 present study

***Synalpheus paraneomeris* Coutière, 1905**
2002 present study

***Synalpheus redactocarpus* Banner, 1953**
2002 present study

***Synalpheus streptodactylus* Coutière, 1905**
2002 present study

Family HIPPOLYTIDAE

?*Saron* spp.
2002 present study

***Thor* sp.**
2002 present study

Suborder REPTANTIA
Infraorder BRACHYURA
Family GRAPSIDAE

***Grapsus* sp.**
2002 present study

***Metopograpsus* sp.**
1985 Sea Engineering 1986 Rainmaker Hotel
2002 present study

***Pachygrapsus minutus* Milne Edwards, 1873**
2002 present study

***Plagusia* sp.**
1985 Sea Engineering 1986 Rainmaker Hotel

***Plagusia tuberculata* (Lamarck, 1818)**
2002 present study

Family PORTUNIDAE

***Scylla serrata* (Forsskål, 1775)**
1979 USACE 1980 Inner harbor

***Thalamita* sp.1**
2002 present study

Family CARPILIIDAE

***Carpilius convexus* (Forsskål, 1775)**
2002 present study

***Carpilius maculatus* (Linnaeus, 1758)**
2002 present study

Family PILUMNIDAE

***Pilumnus* sp.1**
2002 present study

Family TRAPEZIIDAE

***Coralliophaga coralliophaga* complex**
2002 present study

***Domecia glabra* Alcock, 1899**
2002 present study

Family DAIRIDAE

***Daira perlata* (Herbst, 1790)**
2002 present study

Family PANOPEIDAE

***Panopeus pacificus* Edmondson, 1931** **Introduced**
2002 present study

Family XANTHIDAE

***Actaea tomentosus* (Milne Edwards, 1834)**
1924 BPBM-S 1679 Pago Pago Harbor

***Actaeodes tomentosus* (Milne Edwards, 1834)**
2002 present study

***Chlorodiella barbata* (Borradaile, 1900)**
2002 present study

***Chlorodiella cythera* Dana, 1852**
2002 present study

***Chlorodiella laevissima* (Dana, 1852)**
2002 present study

***Chlorodiella nigra* (Forsskål, 1775)**
2002 present study

***Etisus ?utilis J*acquinot, 1852**
2002 present study

***Liomera monticulosa* (Milne-Edwards, 1873)**
2002 present study

***Neoliomera pubescens* (Milne Edwards, 1834)**
2002 present study

***Neoliomera* sp.**
2002 present study

***Paractaea* sp.**
2002 present study

***Phymodius ungulatus* (Milne Edwards, 1834)**
1924 BPBM-S 1678 Pago Pago Harbor
2002 present study

***Pilodius flavus* Rathbun, 1893**
2002 present study

***Pilodius maotieni* Serene, 1971**
2002 present study

***Pilodius pubescens* Dana, 1852**
2002 present study

***Pilodius pugil* Dana, 1852**
2002 present study

***Pilodius* sp.**
2002 present study

***Pseudoliomera variolosa* (Borradaile, 1902)**
2002 present study

***Xanthias* sp.**
2002 present study
***Zosimus aeneus* (Linnaeus, 1758)**
2002 present study
unid. Xanthidae
2002 present study
Family MAJIDAE
***Camposia retusa* Latreille, 1829**
2002 present study
***Menaethuis* sp.**
2002 present study
***Tylocarcinus dumerilii* (Milne-Edwards, 1834)**
2002 present study
unid. Majidae
2002 present study
Family PARTHENOPIDAE
***Daldorfia horrida* (Linnaeus, 1758)**
1985 Birkeland et al. 1987 Fagatele Bay
Family AETHRIDAE
***Aethra scruposa* (Linnaeus, 1764)**
2002 present study
Family CALAPPIDAE
***Calappa hepatica* (Linnaeus, 1758)**
2002 present study
Family LEUCOSIIDAE
***Leucosia* sp. 1**
2002 present study
***Nucia speciosa* Dana, 1852**
1924 BPBM-S 1681 Pago Pago Harbor
Infraorder PALINURIDEA
Family SCYLLARIDAE
***Parribacus antarcticus* (Lund, 1793)**
2002 present study
Infraorder ANOMURA
Family DIOGENIDAE
***Aniculus ursus* (Olivier, 1811)**
2002 present study
***Calcinus lineapropodus* Morgan & Forest, 1991**
2002 present study
***Calcinus elegans* Milne Edwards, 1836**
2002 present study
***Calcinus guamensis* Wooster, 1982**
2002 present study
***Calcinus haigae* Wooster, 1982**
2002 present study
***Calcinus laevimanus* (Randall, 1839)**
2002 present study
***Calcinus latens* (Randall, 1839)**
2002 present study
***Calcinus minutus* Buitendijk, 1937**
2002 present study
***Calcinus morgani* Rahayu & Forest, 1999**
2002 present study
***Ciliopagurus strigatus* (Herbst, 1804)**
2002 present study
***Dardanus deformis* Milne Edwards, 1836**
2002 present study
***Dardanus guttatus* (Olivier, 1812)**
2002 present study

***Dardanus lagopodes* (Forsskål, 1775)**
2002 present study
***Dardanus megistos* (Herbst, 1804)**
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study
***Dardanus* sp.**
2002 present study
***Diogenes biramus* Morgan, 1987**
2002 present study
Family PAGURIDAE
***?Pagurixus* sp.**
2002 present study
***Pagurixus ?laevimanus* (Ortmann, 1892)**
2002 present study
Family GALATHEIDAE
***Galathea* sp.**
2002 present study

Phylum ECTOPROCTA
Class GYMNOLAEMATA
Order CHEILOSTOMATA
Suborder ASCOPHORA
Family CELLEPORIDAE
***Celleporaria* spp.**
2002 present study
***Celleporaria*?**
2002 present study
Family CREPIDACANTHIDAE
***Crepidicantha longiseta* Canu & Bassler, 1928**
2002 present study
Family SAVIGNYELLIDAE
***Savignyella lafontii* (Audouin, 1826)** **Introduced**
2002 present study
Family SCHIZOPORELLIDAE
***Schizoporella* cf. *errata* (Waters, 1878)** **Introduced**
2002 present study
Family SMITTINIDAE
***Parasmittina* sp. 1**
2002 present study
***Parasmittina* spp.**
2002 present study
***Smittina*? sp.**
2002 present study
Family TETRAPLARIIDAE
***Tetraplaria ventricosa* (Haswell, 1880)**
2002 present study
Family ARACHNOPUSIIDAE
***Poricella robusta* Hincks, 1884** **Cryptogenic**
2002 present study
***Watersipora subtorquata* (d'Orbigny, 1842)** **Introduced**
2002 present study
Suborder ANASCA
Family BEANIIDAE
***Beania* sp.**
2002 present study
Family BUGULIDAE
***Bugula dentata* (Lamauroux, 1816)** **Introduced**
2002 present study

***Bugula neritina* (Linnaeus, 1758)** **Introduced**
2002 present study
Family CRIBRILINIDAE
***Cribrilaria radiata* Moll, 1803**
2002 present study
Family EPISTOMIIDAE
***Synnotum aegyptiacum* (Audouin, 1826)**
2002 present study
Family SCRUPOCELLARIIDAE
***Caberea boryi* (Audouin, 1826)**
2002 present study
***Scrupocellaria sinuosa*? Canu & Bassler, 1927**
2002 present study
Family AETEIDAE
***Aetea* sp.**
2002 present study
Family HINCKSINIDAE
***Antropora granulifera* (Hincks, 1880)**
2002 present study
Order CTENOSTOMATA
Suborder STOLONIFERA
Family VESICULARIIDAE
***Amathia* sp.**
2002 present study
Class STENOLAEMATA
Order CYCLOSTOMATA
Suborder TUBULIPORINA
Family TUBULIPORIDAE
***Tubulipora pulcherrima* Kirkpatrick, 1890**
2002 present study
Suborder ARTICULATA
Family CRISIIDAE
***Crisia* sp. 1**
2002 present study
***Crisia* sp.2**
2002 present study
***Crisia* sp.3**
2002 present study

Phylum BRACHIOPODA
Class ARTICULATA
Order RHYNCHONELLIDA
Family LAQUEIDAE
***Frenulina sanguinolenta* Gmelin, 1790**
2002 present study

Phylum ECHINODERMATA
Class ASTEROIDEA
Order PAXILLOSIDA
Family ASTROPECTINIDAE
***Astropecten* sp.**
1924 BPBM-W 724 Pago Pago Harbor
Order VALVATIDA
Family ACANTHASTERIDAE
***Acanthaster planci* Linnaeus, 1758**
1979 USACE 1980 Fagatele Bay
1979 USACE 1980 Aūa
1979 USACE 1980 Fagasā Bay
1979 USACE 1980 Vatia Bay
2002 present study

Family ASTEROPSEIDAE

***Asteropsis carinifera* (Lamarck, 1816)**

2002 present study

Family MITHRODIIDAE

***Mithrodia clavigera* Lamarck, 1816)**

2002 present study

Family OREASTERIDAE

***Culcita novaeguineae* Müller & Troschel, 1842**

2002 present study

Family OPHIDIASTERIDAE

***Fromia nodosa* Clark, 1967**

2002 present study

***Fromia* sp.**

2002 present study

***Fromia* sp. 1**

2002 present study

***Fromia* sp. 2**

2002 present study

***Gomophia egyptiaca* Gray, 1840**

1974 BPBM-W 2292 Vatia Bay

2002 present study

***Leiaster speciosus* von Martens, 1866**

2002 present study

***Linckia laevigata* (Linnaeus 1758)**

1917 Mayor 1924a Aūa

1924 BPBM-W 667 Pago Pago Harbor

1973 Dahl & Lamberts 1977 Aūa

1979 USACE 1980 Aūa

1979 USACE 1980 Utulei

2002 present study

***Linckia multifora* (Lamarck, 1816)**

1924 BPBM-W 666 Pago Pago Harbor

1985 Birkeland et al. 1987 Fagatele Bay

2002 present study

***Neoferdina* cf. *cumingi* (Gray, 1840)**

1985 Birkeland et al. 1987 Fagatele Bay

2002 present study

Class CRINOIDEA

Order COMATULIDA

Family COMASTERIDAE

***Comanthus* sp.**

2002 present study

***Comanthus wahlbergii* (Müller, 1843)**

2002 present study

***Phanogenia gracilis* (Hartlaub, 1890)**

2002 present study

Family COLOBOMETRIDAE

?*Oligometra serripinna* (juvenile) Carpenter, 1881)

2002 present study

***Oligometra carpenteri* (Bell, 1884)**

1974 BPBM-W 2311 Fagasā Bay

Family MARIAMETRIDAE

?*Stephanometra indica* (juvenile) (Smith, 1876)

2002 present study

Class OPHIUROIDEA

Order OPHIURIDA

Family OPHIOCOMIDAE

?*Macrophiothrix* sp.

2002 present study

***Ophiarthrum elegans* Peters, 1851**
2002 present study
***Ophiocoma brevipes* Peters, 1851**
2002 present study
***Ophiocoma erinaceus* Müller & Troschel, 1842**
1947 BPBM-W 1650 Pago Pago Harbor
1974 BPBM-W 2286 Fagasā Bay
2002 present study
***Ophiocoma* sp. (juvenile)**
2002 present study
***Ophiocomella sexradia* (Duncan, 1887)**
2002 present study
***Ophiomastix caryophyllata* Lutken, 1869**
2002 present study
***Ophiomastix mixta* (Marsh, 1980)**
1974 BPBM-W 2284 Fagasā Bay
2002 present study
***Ophiomastix palaoensis* Murakami, 1943**
1974 BPBM-W 2283 Fagasā Bay

Family OPHIODERMATIDAE

***Ophiopeza spinosa* (Ljungman, 1867)**
1974 BPBM-W 2287 Fagasā Bay

Family OPHIURIDAE

***Ophiolepis cincta* Müller & Troschel, 1842**
2002 present study
***Ophioplocus imbricatus* (Müller & Troschel, 1842)**
2002 present study

Family OPHIONEREIDIDAE

***Ophionereis porrecta* Lyman, 1860**
1974 BPBM-W 2289 Fagasā Bay
***Ophionereis ?porrecta* (juvenile) Lyman, 1860**
2002 present study

Family OPHIOTRICHIDAE

***Macrophiothrix longipeda* (Lamarck, 1816)**
2002 present study
***Macrophiothrix* sp.**
2002 present study
***Ophiothrix* sp.**
1929 BPBM-W 773 Pago Pago Harbor
***Ophiothrix* sp. 1**
2002 present study
***Ophiothrix* sp. 2**
2002 present study
Unid. Ophiotrichidae
2002 present study

Family AMPHIURIDAE

***Amphiura* sp.**
2002 present study

Family OPHIACTIDAE

***Ophiactis savignyi* (Müller & Troschel, 1842)** **Cryptogenic**
2002 present study
***Ophiactis* sp. 1**
2002 present study
***Ophiactis* sp. 2**
2002 present study

Class ECHINOIDEA

Order CIDAROIDA

Family CIDARIDAE

***Eucidaris metularia* Lamarck, 1816**

1985 Birkeland et al. 1987 Fagatele Bay

2002 present study

Order DIADEMATOIDA

Family DIADEMATIDAE

***Diadema ?savignyi* (Michelin, 1845)**

2002 present study

***Diadema paucispinum* Agassiz, 1863**

1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.

***Diadema* sp.**

1979 USACE 1980 Aūa

1979 USACE 1980 Utulei

***Echinothrix calamaris* (Pallas, 1774)**

2002 present study

***Echinothrix diadema* (Linnaeus, 1758)**

1985 Birkeland et al. 1987 Fagatele Bay

2002 present study

***Echinothrix* spp.**

1979 USACE 1980 Aūa

Order TEMNOPLEUROIDA

Family TEMNOPLEURIDAE

***Mespilia globulus* Linnaeus, 1758**

1979 USACE 1980 Utulei

1985 Sea Engineering 1986 Rainmaker Hotel

1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.

2002 present study

Order ECHINOIDA

Family ECHINOMETRIDAE

***Echinometra mathaei* (de Blainville, 1825)**

1924 BPBM-W 379 Pago Pago Harbor

1979 USACE 1980 Aūa

1985 Sea Engineering 1986 Rainmaker Hotel

1985 Birkeland et al. 1987 Fagatele Bay

1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.

2002 present study

***Echinometra oblonga* (de Blainville, 1825)**

2002 present study

***Echinometra* sp. (white tip)**

2002 present study

***Echinostrephus ascicularis* Agassiz, 1863**

2002 present study

***Echinostrephus* sp.**

1979 USACE 1980 Fagasā Bay

1979 USACE 1980 Vatia Bay

1985 Birkeland et al. 1987 Fagatele Bay

1985 Sea Engineering 1986 Rainmaker Hotel

Class HOLOTHUROIDEA

Order ASPIDOCHIROTIDA

Family HOLOTHURIIDAE

***Actinopyga echinites* (Jaeger,1833)**

2002 present study

***Actinopyga mauritiana* (Quoy & Gaimard, 1833)**

2002 present study

***Bohadschia argus* Jager, 1833**

2002 present study

***Bohadshia marmarata* (Jaeger,1833)**

2002 present study

***Holothuria (Halodeima) atra* Jaeger, 1833**
1979 USACE 1980 Leloaloa
1985 Sea Engineering 1986 Rainmaker Hotel
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
2002 present study
***Holothuria (Mertensiothuria) leucospilota* (Brandt, 1835)**
2002 present study
***Holothuria (Microthele) whitmaei* Bell, 1887**
2002 present study
***Holothuria (Stauropora) pervicax* Selenka, 1867**
2002 present study
***Holothuria (Thymiosycia) hilla* Lesson, 1830**
2002 present study
***Holothuria ludwigi* (Döderlein, 1896)**
1974 Randall & Devaney 1974 Vatia Bay
1974 BPBM-W 2342 Vatia Bay
***Holothuria* sp.**
1979 USACE 1980 Aūa
1979 USACE 1980 Utulei
Family STICHOPODIDAE
***Stichopus chloronotus* Brandt, 1835**
1917 Mayor 1924a Aūa
1973 Dahl & Lamberts 1977 Aūa
1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Leloaloa
1979 USACE 1980 Aūa
1985 Sea Engineering 1986 Rainmaker Hotel
2002 present study
***Stichopus horrens* Selenka, 1867**
2002 present study
Order APODIDA
Family SYNAPTIDAE
***Opheodesoma* sp. 1**
2002 present study
***Opheodesoma* sp. 2**
2002 present study
***Polyplectana* sp.**
1979 USACE 1980 Utulei
***Synapta maculata* (Chamisso & Eysenhardt, 1821)**
2002 present study

Phylum CHORDATA
Class ASCIDIACEA
Order ENTEROGONA
Suborder APLOUSOBRANCHIA
Family DIDEMNIDAE
***Didemnum molle* (Herdman 1886)**
2002 present study
***Diplosoma* spp.**
2002 present study
unid. Didemnidae
2002 present study
Family POLYCLINIDAE
unid. Polyclinidae
2002 present study
Suborder PHLEBOBRANCHIA
Family ASCIDIIDAE
***Phallusia (Ascidia)* cf. *nigra* Savigny, 1816** **Introduced**
2002 present study
Order PLEUROGONA
Suborder STOLIDOBRANCHIA

Family STYELIDAE

***Cnemidocarpa* sp.**
2002 present study

***Eusynstyela* sp.**
2002 present study

***Polyandrocarpa* sp.**
2002 present study

***Polycarpa* sp.**
2002 present study

***Styela canopus* Savigny, 1816** **Introduced**
2002 present study

Family PYURIDAE

***Microcosmus* sp.**
2002 present study

***Pyura* sp.**
2002 present study

Phylum Chordata

Class Elasmobranchii

Order Carcharhiniformes

Family Carcharhinidae

***Carcharhinus melanopterus* (Quoy & Gaimard, 1824)**
2002 present study

Order Rajiformes

Family Dasyatidae

***Dasyatis kuhlii* (Müller & Henle, 1841)**
1973 BPBM-14998 Pago Pago Harbor

Family Myliobatidae

***Aetobatus narinari* (Euphrasen, 1790)**
1995 Green et al. 1999 Fagatele Bay

Class Actinopterygii

Order Anguilliformes

Family Chlopsidae

***Kaupichthys* sp.**
1974 BPBM-17482 Aūa

Family Ophichthidae

***Scolecenchelys macroptera* (Bleeker, 1857)** (*as Muraenichthys macropterus*)
1974 BPBM-17484 Aūa

Family Muraenidae

***Gymnothorax ?fimbriatus* (Bennett, 1831)**
2002 present study

***Gymnothorax javanicus* (Bleeker, 1859)**
1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Gymnothorax margaritophorus* Bleeker, 1864**
1974 BPBM-17505 Fagatele Bay

***Gymnothorax meleagris* (Shaw & Nodder, 1795)**
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Gymnothorax pictus* (Ahl, 1789)**
1974 Dames & Moore 1974 (as *Gymnothorax ?picta*) Ava Point

***Moringua* sp.**
1974 BPBM-17942 Aūa

***Uropterygius* sp.**
1974 BPBM-17494 Fagatele Bay

Order Clupeiformes

Family Clupeidae

***Herklotsichthys punctatus* (Rüppell, 1837)**

1979 USACE 1980 Inner harbor

***Herklotsichthys quadrimaculatus* (Rüppell, 1837)**

1970 BPBM-25315 Pago Pago Harbor
1974 BPBM-17497 Fagatele Bay
1979 BPBM-24452 Fagasā Bay

***Sardinella melanura* (Cuvier, 1829)**

1929 BPBM-5147 Pago Pago Harbor
1974 BPBM-28182 Aūa
1979 USACE 1980 Inner harbor

***Spratelloides* sp.**

1979 USACE 1980 Fagasā Bay

Family Engraulidae

***Encrasicholina heteroloba* (Rüppell, 1837)**

1974 BPBM-17493 Fagatele Bay

Order Aulopiformes

Family Synodontidae

***Saurida gracilis* (Quoy & Gaimard, 1824)**

1974 Dames & Moore 1974 Ava Point

***Synodus variegatus* (Lacépède, 1803)**

1973 BPBM-15003 Pago Pago Harbor
2002 present study

Order Ophidiiformes

Family Carapidae

***Encheliophis gracilis* (Bleeker, 1856)**

1973 BPBM-15005 Pago Pago Harbor

Family Bythitidae

***Microbrotula randalli* Cohen & Wourms, 1976**

1974 BPBM-17507 Fagatele Bay
1974 BPBM-18032 Fagatele Bay

Order Lophiiformes

Family Antennariidae

***Antennarius* sp.**

1929 BPBM-5146 Pago Pago Harbor

Order Atheriniformes

Family Atherinidae

***Atherinomorus lacunosus* (Forster, 1801)**

1973 BPBM-15000 Pago Pago Harbor

***Hypoatherina temminckii* (Bleeker, 1853)**

1970 BPBM-25333 Pago Pago Harbor

Family Notocheiridae

***Iso nesiotes* Saeed, Ivantsoff, & Crowley, 1993**

1980 BPBM-29308 Fagasā Bay

Order Beloniformes

Family Belonidae

***Tylosurus crocodilus* (Peron & Lesueur, 1821)**

2002 present study

Family Hemiramphidae

***Hemiramphus* sp.**

1971 BPBM-11296 Pago Pago Harbor

***Hyporhamphus affinis* (Günther, 1866)**

1973 BPBM-15006 Pago Pago Harbor

***Hyporhamphus dussumieri* (Valenciennes, 1846)**

1973 BPBM-14995 Pago Pago Harbor

Family Exocoetidae

***Cypselurus* sp.**

1970 BPBM-25312 Pago Pago Harbor

Order Beryciformes

Family Holocentridae

***Myripristis adusta* Bleeker, 1853**

1974 Randall & Devaney 1974 Vatia Bay

1979 USACE 1980 Vatia Bay

***Myripristis berndti* Jordan & Evermann 1903**

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

***Myripristis chryseres* Jordan & Evermann, 1903**

1974 BPBM-17500 Fagatele Bay

***Myripristis kuntee* Valenciennes, 1831**

1974 Randall & Devaney 1974 Vatia Bay

1979 USACE 1980 Vatia Bay

***Myripristis murdjan* (Forsskål, 1775)**

2002 present study

***Myripristis violacea* Bleeker, 1851**

1995 Green et al. 1999 Fagatele Bay

***Neoniphon aurolineatus* (Liénard, 1839)**

1902 BPBM-3734 Pago Pago Harbor

***Neoniphon opercularis* (Valenciennes, 1831)**

1995 Green et al. 1999 Fagatele Bay

***Neoniphon sammara* (Forsskål, 1775)**

1929 BPBM-5156 Pago Pago Harbor

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

2002 present study

***Sargocentron caudimaculatum* (Rüppell, 1838)**

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

***Sargocentron diadema* (Lacépède, 1802)**

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

NA BPBM-5365 Pago Pago Harbor

***Sargocentron lepros* (Allen & Cross, 1983)**

1902 BPBM-3740 Pago Pago Harbor

***Sargocentron microstoma* (Günther, 1859)**

1974 BPBM-17489 Aūa

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

2002 present study

***Sargocentron praslin* (Lacépède, 1802)**

1902 BPBM-3726 Pago Pago Harbor

***Sargocentron spiniferum* (Forsskål, 1775)**

1974 BPBM-17483 Aūa

1975 BPBM-18717 Aūa

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

2002 present study

***Sargocentron tiere* (Cuvier, 1829)**

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

2002 present study

***Sargocentron tiereoides* (Bleeker, 1853)**

1971 BPBM-11318 Fagasā Bay

***Sargocentron violaceum* (Bleeker, 1853)**

1961 BPBM-25783 Pago Pago Harbor

Order Syngnathiformes

Family Aulostomidae

***Aulostomus chinensis* (Linnaeus, 1766)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Family Syngnathidae

***Corythoichthys amplexus* Dawson & Randall, 1975**

1962 BPBM-10489 Pago Pago Harbor

***Corythoichthys* ?*flavofasciatus* (Rüppell, 1838)**

2002 present study

***Corythoichthys intestinalis* (Ramsay, 1881)**

2002 present study

***Corythoichthys* sp.**

2002 present study

***Cosmocampus maxweberi* (Whitley, 1933)**

1973 BPBM-14996 Pago Pago Harbor

***Doryrhamphus excisus* Kaup, 1856**

1970 BPBM-25316 Pago Pago Harbor

***Hippichthys spicifer* (Rüppell, 1838)**

1971 BPBM-11312 Fagasā Bay

Family Fistulariidae

***Fistularia commersonii* Rüppell, 1838**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Fistularia* sp.**

1974 Dames & Moore 1974 Ava Point

Order Scorpaeniformes

Family Scorpaenidae

***Pterois antennata* (Bloch, 1787)**

2002 present study

***Pterois radiata* Cuvier, 1829**

2002 present study

***Pterois* sp.**

1974 Dames & Moore 1974 Ava Point

***Scorpaenopsis* sp.**

2002 present study

***Synanceia verrucosa* Bloch & Schneider, 1801**

2002 present study

Order Perciformes

Family Labridae

***Anampses caeruleopunctatus* Rüppell, 1829**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Anampses chrysocephalus* Randall, 1958**

1974 Dames & Moore 1974 Ava Point

***Anampses meleagrides* Valenciennes, 1840**

1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Anampses twistii* Bleeker, 1856**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Bodianus axillaris* (Bennett, 1832)**

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Bodianus loxozonus* (Snyder, 1908)**

1995 Green et al. 1999 Fagatele Bay

***Bodianus* sp.**

1974 Dames & Moore 1974 Ava Point

***Cheilinus chlorourus* (Bloch, 1791)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Cheilinus fasciatus* (Bloch, 1791)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1983 BPBM-28935 Utulei
2002 present study

***Cheilinus oxycephalus* Bleeker, 1853**

1971 BPBM-11331 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Cheilinus trilobatus* Lacépède, 1801**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Cheilinus undulatus* Rüppell, 1835**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Cheilinus unifasciatus* Streets, 1877**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Cirrhilabrus* sp.**

1971 BPBM-11310 Fagasā Bay
1974 BPBM-17561 Pago Pago Harbor; W side
1995 Green et al. 1999 Fagatele Bay
2002 present study

Coris aygula Lacépède, 1801

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Coris gaimard* (Quoy & Gaimard, 1824)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Cymolutes praetextatus* (Quoy & Gaimard, 1834)**

1974 BPBM-17480 Aūa

***Epibulus insidiator* (Pallas, 1770)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Gomphosus varius* Lacépède, 1801**

1974 Randall & Devaney 1974 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Fagasā Bay
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Halichoeres biocellatus* Shultz, 1960**

1985 Birkeland et al. 1987 Fagatele Bay

***Halichoeres hortulanus* (Lacépède, 1801)**

1974 Dames & Moore 1974 Ava Point
1974 BPBM-17560 Pago Pago Harbor; W side
1974 Randall & Devaney 1974 (as *Halichoeres centriquadrus*) Vatia Bay
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Halichoeres margaritaceus* (Valenciennes, 1839)**

1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Fagasā Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Vatia Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study (as *Halichoeres margaritaceus* complex)

***Halichoeres marginatus* Rüppell, 1835**

1973 BPBM-15001 Fagatele Bay
1974 Randall & Devaney 1974 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Halichoeres melanurus* (Bleeker, 1851)**

1973 BPBM-15002 Fagatele Bay
1974 Dames & Moore 1974 (as *Halichoeres hoeveni*) Ava Point
1979 USACE 1980 (as *Halichoeres hoveni*) Utulei
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Halichoeres ornatissimus* (Garrett, 1863)**

1995 Green et al. 1999 Fagatele Bay

***Halichoeres prosopeion* (Bleeker, 1853)**

1973 BPBM-15011 Fagatele Bay
1976 BPBM-24114 Fagatele Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
2002 present study

***Halichoeres trimaculatus* (Quoy & Gaimard, 1834)**

1974 Randall & Devaney 1974 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

***Hemigymnus fasciatus* (Bloch, 1792)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Hemigymnus melapterus* (Bloch, 1791)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Hemipteronotus* sp.**

1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay

***Hologymnosus doliatus* (Lacépède, 1801)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Labrichthys* sp.**

1974 Dames & Moore 1974 Ava Point

***Labrichthys unilineatus* (Guichenot, 1847)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Labroides bicolor* Fowler & Bean 1928**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Labroides dimidiatus* (Valenciennes, 1839)**

1974 BPBM-17475 Fagasā Bay
1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Labroides rubrolabiatus* Randall, 1958**

1973 BPBM-15012 Fagatele Bay
1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study (as *Labroides* ?*rubrolabiatus*)

***Labropsis xanthonota* Randall, 1981**

1971 BPBM-11316 Fagasā Bay
1977 BPBM-24126 Aūa
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Macropharyngodon meleagris* (Valenciennes, 1839)**

1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Macropharyngodon negrosensis* Herre, 1932**

1902 BPBM-4778 Pago Pago Harbor

***Novaculichthys taeniourus* (Lacépède, 1801)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Oxycheilinus digramma* (Lacépède, 1801)**

1971 BPBM-11320 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Oxycheilinus* sp.**

2002 present study

***Oxycheilinus unifasciatus* (Streets, 1877)**

2002 present study

***Pseudocheilinus evanidus* Jordan & Evermann, 1903**

1995 Green et al. 1999 Fagatele Bay

***Pseudocheilinus hexataenia* (Bleeker, 1857)**

1971 BPBM-11337 Fagasā Bay
1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pseudocheilinus octotaenia* Jenkins, 1901**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pseudodax moluccanus* (Valenciennes 1840)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Pteragogus* sp.**

1971 BPBM-11319 Fagasā Bay

***Stethojulis balteata* (Quoy & Gaimard, 1824)**

1974 Dames & Moore 1974 Ava Point

***Stethojulis bandanensis* (Bleeker, 1851)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Stethojulis strigiventer* (Bennett, 1832)**

1974 Dames & Moore 1974 Ava Point
2002 present study

***Stethojulis trilineata* (Bloch & Schneider, 1801)**

1974 Randall & Devaney 1974 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Vatia Bay
1995 Green et al. 1999 Fagatele Bay

***Thalassoma amblycephalum* (Bleeker, 1856)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Thalassoma hardwicke* (Bennett, 1828)**

1974 Dames & Moore 1974 Ava Point
1974 Randall & Devaney 1974 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Fagasā Bay
1979 USACE 1980 Fagatele Bay
1979 USACE 1980 Aūa
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Thalassoma lutescens* (Lay & Bennett, 1839)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Thalassoma purpureum* (Forsskål, 1775)**

1995 Green et al. 1999 Fagatele Bay
2002 present study

Thalassoma *quinquevittatum* (Lay & Bennett, 1839)

1974 Dames & Moore 1974 Ava Point
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Fagasā Bay
1979 USACE 1980 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Thalassoma trilobatum* (Lacépède, 1801)**

1979 USACE 1980 (as Thalassoma fuscus) Fagasā Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay

Family Scaridae

***Bolbometopon muricatum* (Valenciennes, 1840)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Calotomus carolinus* (Valenciennes, 1840)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Cetoscarus bicolor* (Rüppell, 1829)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chlorurus capistratoides* (Bleeker, 1847)**

1974 Randall & Devaney 1974 (*as Scarus capistroides*) Vatia Bay
1979 USACE 1980 (*as Scarus capistroides*) Vatia Bay

***Chlorurus japanensis* (Bloch, 1789)**

1985 Birkeland et al. 1987 Fagatele Bay

***Chlorurus pyrrhurus* (Jordan & Seale, 1906)**

1995 Green et al. 1999 Fagatele Bay

***Chlorurus sordidus* (Forsskål, 1775)**

1974 Randall & Devaney 1974 (as *Scarus sordidus*) Vatia Bay
1979 USACE 1980 (as *Scarus sordidus*) Vatia Bay
1979 Wass (in Sea Engineering 1986) (as *Scarus sordidus*) Rainmaker Hotel
1985 Birkeland et al. 1987 (as *Scarus sordidus*) Fagatele Bay
1995 Green et al. 1999 (as *Scarus sordidus*) Fagatele Bay
2002 present study

***Chlorurus frontalis* Valenciennes, 1839**

1974 Randall & Devaney 1974 (as *Scarus jonesi*) Vatia Bay
1979 USACE 1980 (as *Scarus jonesi*) Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 (as *Scarus frontalis*) Fagatele Bay

***Chlorurus gibbus* Rüppell, 1829**

1985 Birkeland et al. 1987 (as *Scarus gibbus*) Fagatele Bay

***Chlorurus microrhinos* Bleeker, 1854**

1995 Green et al. 1999 (as *Scarus microrhinos*) Fagatele Bay
2002 present study

***Hipposcarus longiceps* (Valenciennes, 1840)**

1995 Green et al. 1999 Fagatele Bay

***Scarus altipinnis* (Steindachner, 1879)**

1995 Green et al. 1999 Fagatele Bay
1985 Birkeland et al. 1987 (as *Scarus brevifilis*) Fagatele Bay

***Scarus dimidiatus* Bleeker, 1859**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Scarus dubius* Bennett, 1828** **Endemic**

NA BPBM-5341 Pago Pago Harbor

***Scarus forsteni* (Bleeker, 1861)**

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Scarus frenatus* Lacépède, 1802**

1974 Randall & Devaney 1974 (as *Scarus sexvittatus*) Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Scarus frontalis* Valenciennes, 1839**

1974 Randall & Devaney 1974 (as *Scarus jonesi*) Vatia Bay
1979 USACE 1980 (as *Scarus jonesi*) Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

Scarus ghobban **Forsskål, 1775**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1995 Green et al. 1999 Fagatele Bay

Scarus globiceps **Valenciennes, 1840**

1995 Green et al. 1999 Fagatele Bay
2002 present study

Scarus niger **Forsskål, 1775**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

Scarus oviceps **Valenciennes, 1840**

1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Scarus psittacus **Forsskål, 1775**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Scarus *rubroviolaceus* Bleeker, 1849

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Scarus schlegeli **(Bleeker, 1861)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Scarus **sp.**

1979 USACE 1980 Utulei
1979 USACE 1980 Fagasā Bay
1979 USACE 1980 Fagatele Bay
1979 USACE 1980 Vatia Bay

Scarus spinus **(Kner,1868)**

1974 Randall & Devaney 1974 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

Scarus tricolor **Bleeker, 1847**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

Family Mugilidae

Liza vaigiensis **(Quoy & Gaimard, 1825)**

1979 USACE 1980 Fagasā Bay

Valamugil engeli **(Bleeker, 1858)**

2002 present study

Valamugil **sp.**

1976 BPBM-24115 Fagatele Bay

Family Sphryaenidae

Sphyraena barracuda **(Walbaum, 1792)**

1995 Green et al. 1999 Fagatele Bay

Family Gobiidae

Amblyeleotris guttata **(Fowler, 1938)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

Amblyeleotris periophthalma **(Bleeker, 1853)**

1974 BPBM-17446 Aūa

Cryptocentrus **sp.**

1929 BPBM-5233 Pago Pago Harbor

Ctenogobiops tangaroai **Lubbock & Polunin, 1977**

NA BPBM-5350 Pago Pago Harbor

***Eviota disrupta* Karnella & Lachner, 1981**

1923 BPBM-4833 Pago Pago Harbor

***Gnatholepis anjerensis* (Bleeker, 1850)**

NA BPBM-5358 Pago Pago Harbor

***Gobiodon citrinus* (Rüppell, 1838)**

1974 BPBM-17499 Fagatele Bay

***Istigobius ornatus* (Rüppell, 1830)**

1971 BPBM-11340 Fagasā Bay

***Istigobius* sp.**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

***Paragobiodon echinocephalus* (Rüppell, 1830)**

1902 BPBM-4226 Pago Pago Harbor

***Priolepis semidoliatus* (Valenciennes, 1837)**

1962 BPBM-10490 Pago Pago Harbor

***Trimma* sp.**

1971 BPBM-11327 Fagasā Bay

***Valenciennea puellaris* (Tomiyama, 1956)**

1979 BPBM-22719 Pago Pago Harbor, Oil Dock

***Valenciennea strigata* (Broussonet, 1782)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Family Acanthuridae

***Acanthurus achilles* Shaw, 1803**

1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acanthurus albipectoralis* Allen & Ayling, 1987**

1995 Green et al. 1999 Fagatele Bay

***Acanthurus blochii* Valenciennes, 1835**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acanthurus dussumieri* Valenciennes, 1835**

2002 present study

***Acanthurus guttatus* (Forster & Schneider, 1801)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acanthurus lineatus* (Linnaeus, 1758)**

1974 Dames & Moore 1974 Ava Point
1974 Randall & Devaney 1974 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Fagasā Bay
1979 USACE 1980 Fagatele Bay
1979 USACE 1980 Aūa
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acanthurus maculiceps* (Ahl, 1923)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acanthurus nigricans* (Linnaeus, 1758))**

1974 Randall & Devaney 1974 (as *Acanthurus glaucopareius*) Vatia Bay
1974 Dames & Moore 1974 Ava Point

1979 USACE 1980 (as *Acanthurus glaucopareius*) Vatia Bay
1979 Wass (in Sea Engineering 1986) (as *Acanthurus glaucopareius*) Rainmaker Hotel
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acanthurus nigricauda* Duncker & Mohr**
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acanthurus nigrofuscus* (Forsskål, 1775)**
1974 Randall & Devaney 1974 Vatia Bay
1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Fagatele Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Aūa
1979 USACE 1980 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Acanthurus nigrofuscus* (Forsskå,l 1775)**
2002 present study

***Acanthurus nigroris* Valenciennes 1835**
1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acanthurus olivaceus* Bloch & Schneider, 1801**
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acanthurus pyroferus* Kittlitz, 1834**
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acanthurus thompsoni* (Fowler, 1923)**
1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acanthurus triostegus* (Linnaeus, 1758)**
1974 Randall & Devaney 1974 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Fagatele Bay
1979 USACE 1980 Vatia Bay
1979 USACE 1980 Aūa
1985 Birkeland et al. 1987 Fagatele Bay
1990 Sea Engineering/AECOS 1991 Atu'u-Leasi Pt.
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Acanthurus xanthopterus* Valenciennes, 1835**
1985 Birkeland et al. 1987 Fagatele Bay
1990 AECOS 1991 Inner Harbor
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Ctenochaetus binotatus* Randall, 1955**
1995 Green et al. 1999 Fagatele Bay

***Ctenochaetus striatus* (Quoy & Gaimard, 1825)**

1974 Dames & Moore 1974 Ava Point
1974 Randall & Devaney 1974 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Utulei
1979 USACE 1980 Aūa
1979 USACE 1980 Leloaloa
1979 USACE 1980 Fagatogo
1979 USACE 1980 Vatia Bay
1979 USACE 1980 Fagatele Bay
1979 USACE 1980 Onesosopo
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Ctenochaetus strigosus* (Bennett, 1828)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Naso annulatus* (Quoy & Gaimard, 1825)**

2002 present study

***Naso brevirostris* (Cuvier, 1829)**

1974 Dames & Moore 1974 Ava Point

***Naso lituratus* (Forster & Schneider, 1801)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Naso tuberosus* Lacépède, 1801**

1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Naso unicornis* (Forsskål 1775)**

1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Zebrasoma scopas* (Cuvier, 1829)**

1974 Dames & Moore 1974 Ava Point
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Zebrasoma veliferum* (Bloch, 1797)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Family Zanclidae

***Zanclus cornutus* (Linnaeus, 1758)**

1971 BPBM-11321 Fagasā Bay
1974 Dames & Moore 1974 Ava Point
1974 BPBM-17498 Fagatele Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Family Siganidae

***Siganus argenteus* (Quoy & Gaimard, 1825)**

1979 USACE 1980 Inner harbor
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Siganus fuscescens* (Houttuyn, 1782)**

1971 BPBM-11317 Fagasā Bay

***Siganus punctatus* (Schneider, 1801)**

1995 Green et al. 1999 Fagatele Bay

***Siganus spinus* (Linnaeus, 1758)**

1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Aūa
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Family Scombridae

***Gymnosarda unicolor* (Rüppell, 1838)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Rastrelliger kanagurta* (Cuvier, 1829)**

1979 USACE 1980 Utulei
1990 AECOS 1991 Inner Harbor

***Rastrelliger* sp.**

1974 BPBM-17504 Fagatele Bay

***Scomber japonicus* Houttuyn, 1782**

1974 BPBM-17502 Fagatele Bay

Family Microdesmidae

***Nemateleotris magnifica* Fowler, 1938**

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Ptereleotris evides* (Jordan & Hubbs, 1925)**

1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Ptereleotris heteroptera* (Bleeker, 1855)**

1971 BPBM-11264 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Ptereleotris* sp.**

1971 BPBM-11335 Fagasā Bay
1971 BPBM-11338 Fagasā Bay
2002 present study

Family Blenniidae

***Alticus* sp.**

1971 BPBM-11311 Fagasā Bay

***Aspidontus dussumieri* (Valenciennes, 1836)**

1971 BPBM-11314 Fagasā Bay

***Aspidontus taeniatus* Quoy & Gaimard, 1834**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Blenniella chrysospilos* (Bleeker, 1857)**

1971 BPBM-11307 Fagasā Bay
1979 Wass (in Sea Engineering 1986) (*as Istiblennius coronatus*) Rainmaker Hotel

***Blenniella periophthalmus* (Valenciennes, 1836)**

1974 BPBM-17476 Fagasā Bay

***Cirripectes polyzona* (Bleeker, 1868)**

1974 Dames & Moore 1974 (as *Cirripectes sebae*) Ava Point

1974 BPBM-17486 Aūa
1979 Wass (in Sea Engineering 1986) (as *Cirripectes sebae*) Rainmaker Hotel
1985 Birkeland et al. 1987 (as *Cirripectes sebae*) Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Cirripectes* sp.**
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay

***Cirripectes stigmaticus* Strasburg & Schultz, 1953**
1974 BPBM-17503 Fagatele Bay
1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Cirripectes variolosus* (Valenciennes, 1836)**
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Ecsenius bicolor* (Day, 1988)**
1995 Green et al. 1999 Fagatele Bay

***Entomacrodus decussatus* (Bleeker, 1857)**
1971 BPBM-11309 Fagasā Bay

***Meiacanthus atrodorsalis* (Günther, 1877)**
1974 Dames & Moore 1974 Ava Point
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Aūa
1979 USACE 1980 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Meiacanthus ditrema* Smith-Vaniz, 1976**
1979 USACE 1980 Fagatogo
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Utulei

***Plagiotremus laudandus* (Whitley, 1961)**
1974 Dames & Moore 1974 (as *Runula laudandus*) Ava Point

***Plagiotremus rhinorhynchos* (Bleeker, 1852)**
1974 Dames & Moore 1974 (as *Runula rhinorhynchos*) Ava Point

***Plagiotremus tapeinosoma* (Bleeker, 1857)**
1974 Dames & Moore 1974 (as *Runula tapeinosoma*) Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

***Salarias fasciatus* (Bloch, 1786)**
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

Family Xenisthmidae

***Xenisthmus* sp.**
1978 BPBM-18714 Fagatele Bay

Family Serranidae

***Aethaloperca rogaa* (Forsskål, 1775)**
1995 Green et al. 1999 Fagatele Bay

***Anyperodon leucogrammicus* (Valenciennes, 1828)**
1995 Green et al. 1999 Fagatele Bay

***Belonoperca chabanaudi* Fowler & Bean, 1930**
1985 Birkeland et al. 1987 (as *Gracila chabanaudi*) Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Cephalopholis argus* Bloch & Schneider, 1801**
1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Cephalopholis leopardus* (Lacépède, 1801)**
1971 BPBM-11341 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay

***Cephalopholis sonnerati* (Valenciennes, 1828)**

1971 BPBM-11333 Fagasā Bay

***Cephalopholis spiloparaea* (Valenciennes, 1828)**

1929 BPBM-5389 Pago Pago Harbor
1973 BPBM-15008 Pago Pago Harbor

***Cephalopholis urodeta* (Forster, 1801)**

1974 BPBM-17496 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Epinephelus fuscoguttatus* (Forsskål, 1775)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

***Epinephelus hexagonatus* (Forster, 1801)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Epinephelus howlandi* (Günther, 1873)**

1995 Green et al. 1999 Fagatele Bay

***Epinephelus maculatus* (Bloch, 1790)**

1974 BPBM-17488 Aūa

***Epinephelus merra* Bloch, 1793**

1975 BPBM-31042 Aūa
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
2002 present study

***Epinephelus* sp.**

1974 Dames & Moore 1974 Ava Point

***Epinephelus tauvina* (Forsskål, 1775)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study (as *Epinephelus* ?*tauvina*)

***Epinephelus timorensis* Randall & Allen, 1987**

1977 BPBM-22718 Pago Pago Harbor

***Gracila albomarginata* (Fowler & Bean, 1930)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Liopropoma mitratum* Lubbock & Randall, 1978**

1974 BPBM-38578 Aūa

***Liopropoma* sp.**

1971 BPBM-11339 Fagasā Bay
1974 BPBM-17562 Pago Pago Harbor; W side

***Plectropomus laevis* (Lacépède, 1801)**

1962 BPBM-10491 Pago Pago Harbor
1974 BPBM-17487 Aūa
2002 present study

***Plectropomus leopardus* (Lacépède, 1802)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study (as *Plectropomus* ?*leopardus*)

***Plectropomus truncatus* (Fowler & Bean 1930):**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

***Pseudanthias hypselosoma* Bleeker, 1878**

1923 BPBM-3812 Pago Pago Harbor

***Pseudanthias pascalus* (Jordan & Tanaka 1927)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Pseudogramma astigmum* Randall & Baldwin, 1997**

1974 BPBM-17492 Fagatele Bay

***Pseudogramma* sp.**

NA BPBM-5366 Pago Pago Harbor

***Variola louti* (Forsskål 1775)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

Family Pseudochromidae

***Pseudochromis jamesi* Schultz, 1943**

1974 BPBM-17485 Aūa

***Pseudochromis porphyreus* Lubbock & Goldman, 1974**

1976 BPBM-18726 Fagasā Bay
NA BPBM-5345 Pago Pago Harbor

***Pseudoplesiops* sp.**

1971 BPBM-11322 Fagasā Bay

Family Pinguipedidae

***Parapercis cephalopunctata* (Seale,1901)**

1985 Birkeland et al. 1987 Fagatele Bay

***Parapercis clathrata* Ogilby, 1910**

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Parapercis millepunctata* (Günther, 1860)**

1971 BPBM-11324 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay

***Parapercis* sp.**

2002 present study

Family Plesiopidae

***Steeneichthys plesiopsus* Allen & Randall, 1985**

1975 BPBM-20012 Aūa
1975 BPBM-24110 Aūa

Family Terapontidae

***Terapon jarbua* (Forsskål, 1775)**

1974 Dames & Moore 1974 Ava Point

Family Priacanthidae

***Heteropriacanthus cruentatus* (Lacépède, 1801)**

2002 present study

***Priacanthus blochii* Bleeker, 1853**

1973 BPBM-15004 Pago Pago Harbor

Family Apogonidae

***Apogon dammermani* Weber & de Beaufort, 1929**

1977 BPBM-18724 Utulei

***Apogon kallopterus* Bleeker, 1856**

1974 BPBM-17490 Aūa

***Apogon novemfasciatus* Cuvier, 1828**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
2002 present study (as *Apogon* ?*novemfasciatus*)

***Archamia fucata* (Cantor, 1850)**

NA BPBM-5367 Pago Pago Harbor

***Cercamia* sp.**

1974 BPBM-17501 Fagatele Bay

***Cheilodipterus macrodon* (Lacépède, 1802)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Cheilodipterus quinquelineatus* Cuvier, 1828**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

***Fowleria marmorata* (Alleyne & Macleay, 1877)**

1971 BPBM-11323 Fagasā Bay

***Fowleria variegata* (Valenciennes, 1832)**

1971 BPBM-11303 Fagasā Bay

***Pseudamiops gracilicauda* (Lachner, 1953)**

1970 BPBM-25314 Pago Pago Harbor

Family Malacanthidae

***Malacanthus brevirostris* Guichenot, 1848**

2002 present study

***Malacanthus latovittatus* (Lacépède, 1801)**

1985 Birkeland et al. 1987 Fagatele Bay

***Malacanthus* sp.**

1974 Dames & Moore 1974 Ava Point

Family Carangidae

***Carangidae* sp.**

1971 BPBM-11329 Fagasā Bay

***Caranx ignobilis* (Forsskål, 1775)**

1971 BPBM-11325 Fagasā Bay

***Caranx melampygus* Cuvier, 1833**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

2002 present study

***Caranx sexfasciatus* Quoy & Gaimard, 1824**

1974 BPBM-17000 Aūa

1982 BPBM-28904 Pago Pago Harbor, Whale Rock

2002 present study

***Caranx* sp.**

1974 Dames & Moore 1974 Ava Point

1979 USACE 1980 Inner harbor

***Scomberoides lysan* (Forsskål, 1775)**

1985 Birkeland et al. 1987 Fagatele Bay

1990 AECOS 1991 Inner Harbor

1995 Green et al. 1999 Fagatele Bay

***Selar crumenophthalmus* (Bloch, 1793)**

1979 USACE 1980 Fagatogo

***Trachinotus baillonii* (Lacépède, 1801)**

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

***Uraspis* sp.**

1990 AECOS 1991 Inner Harbor

Family Coryphaenidae

***Coryphaena hippurus* Linnaeus, 1758**

1995 Green et al. 1999 Fagatele Bay

Family Leiognathidae

***Gazza minuta* (Bloch, 1795)**

1984 BPBM-29374 Fagatele Bay

***Leiognathus* sp.**

1970 BPBM-25332 Pago Pago Harbor

1970 BPBM-25310 Pago Pago Harbor

1973 BPBM-14997 Pago Pago Harbor

Family Lutjanidae

***Aphareus furca* (Lacépède, 1801)**

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

2002 present study

***Aphareus* sp.**

1974 Dames & Moore 1974 Ava Point

***Aprion* sp.**

1974 Dames & Moore 1974 Ava Point

***Aprion virescens* Valenciennes, 1830**

1995 Green et al. 1999 Fagatele Bay

2002 present study

***Lutjanus bohar* (Forsskål, 1775)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Lutjanus fulvus* (Forster, 1801)**

1974 Dames & Moore 1974 Ava Point
1974 Randall & Devaney 1974 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1990 AECOS 1991 Inner Harbor
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Lutjanus gibbus* (Forsskål, 1775)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Lutjanus kasmira* (Forsskål, 1775)**

1979 USACE 1980 Inner harbor
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Lutjanus monostigma* (Cuvier, 1828)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Macolor macularis* Fowler, 1931**

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Macolor niger* (Forsskål, 1775)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Paracaesio xanthura* (Bleeker, 1869)**

1974 BPBM-17481 Aūa

Family Caesionidae

***Caesio caerulaurea* Lacépède, 1801**

1951 BPBM-26346 Pago Pago Harbor
1974 Dames & Moore 1974 (as Caesio caerulaureus) Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1995 Green et al. 1999 Fagatele Bay

***Caesio cuning* (Bloch, 1791)**

1995 Green et al. 1999 Fagatele Bay

***Caesio teres* Seale, 1906**

1970 BPBM-25317 Pago Pago Harbor
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Caesio xanthonota* Bleeker 1853**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay

***Pterocaesio marri* Schultz, 1953**

1971 BPBM-11326 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pterocaesio* sp.**

1974 Dames & Moore 1974 Ava Point

***Pterocaesio tile* (Cuvier, 1830)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pterocaesio trilineata* Carpenter, 1987**

1971 BPBM-11315 Fagasā Bay
1995 Green et al. 1999 Fagatele Bay

Family Gerreidae

***Gerres* sp.**

1990 AECOS 1991 Inner Harbor
NA BPBM-5363 Pago Pago Harbor

Family Haemulidae

***Plectorhinchus orientalis* (Bloch, 1793)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Family Lethrinidae

***Gnathodentex aurolineatus* (Lacépède, 1802)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Lethrinus harak* (Forsskål, 1775)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Monotaxis grandoculis* (Forsskål, 1775)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Family Nemipteridae

***Scolopsis trilineata* Kner, 1868**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
2002 present study

Family Mullidae

***Mulloidichthys flavolineatus* (Lacépède 1801)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Mulloidichthys* sp.**

1974 Dames & Moore 1974 Ava Point

***Mulloidichthys vanicolensis* (Valenciennes, 1831)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Parupeneus barberinus* (Lacépède, 1801)**

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Parupeneus bifasciatus* (Lacépède, 1801)**

1974 Dames & Moore 1974 Ava Point
1974 Randall & Devaney 1974 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Parupeneus cyclostomus* (Lacépède 1801)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Parupeneus multifasciatus* (Quoy & Gaimard, 1825)**

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Parupeneus pleurostigma* (Bennett, 1831)**

1995 Green et al. 1999 Fagatele Bay

***Parupeneus trifasciatus* (Lacépède, 1801)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay

Family Pempheridae

***Pempheris oualensis* Cuvier, 1831**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pempheris* sp.**

1974 Dames & Moore 1974 Ava Point

Family Kyphosidae

***Kyphosus cinerascens* (Forsskål, 1775)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Kyphosus elegans* (Peters, 1869)**

1974 Dames & Moore 1974 Ava Point

***Kyphosus vaigiensis* (Quoy & Gaimard, 1825)**

1995 Green et al. 1999 Fagatele Bay
2002 present study

Family Ephippidae

***Platax orbicularis* (Forsskål, 1775)**

2002 present study

Family Chaetodontidae

***Chaetodon auriga* Forsskål 1775**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chaetodon bennetti* Cuvier, 1831**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Chaetodon citrinellus* Cuvier, 1831**

1974 Randall & Devaney 1974 Vatia Bay
1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Vatia Bay
1979 USACE 1980 Aūa
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chaetodon ephippium* Cuvier 1831**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chaetodon falcula* Bloch 1795**

1974 Dames & Moore 1974 Ava Point

***Chaetodon lunula* (Lacépède 1802)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Chaetodon *melannotus* Bloch & Schneider, 1801

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chaetodon mertensii* Cuvier, 1831**

1974 Dames & Moore 1974 Ava Point
2002 present study

***Chaetodon ornatissimus* Cuvier, 1831**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chaetodon pelewensis* Kner, 1868**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Chaetodon punctatofasciatus* Cuvier, 1831**

2002 present study

***Chaetodon quadrimaculatus* Gray, 1831**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Chaetodon rafflesi* Bennett, 1830**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chaetodon reticulatus* Cuvier, 1831**

1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Vatia Bay
1979 USACE 1980 Fagasā Bay
1979 USACE 1980 Aūa
1979 USACE 1980 Fagatele Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chaetodon semeion* Bleeker, 1855**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chaetodon trifascialis* Quoy & Gaimard, 1825**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chaetodon trifasciatus* Park, 1797**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Aūa
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Chaetodon ulietensis* Cuvier, 1831**

1979 USACE 1980 Aūa
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chaetodon unimaculatus* Bloch, 1787**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chaetodon vagabundus* Linnaeus, 1758**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Forcipiger flavissimus* Jordan & McGregor 1898**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Forcipiger longirostris* (Broussonet, 1782)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Hemitaurichthys polylepis* (Bleeker, 1857)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Heniochus acuminatus* (Linnaeus, 1758)**

1974 Dames & Moore 1974 Ava Point
2002 present study

***Heniochus chrysostomus* Cuvier 1831**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Heniochus monoceros* Cuvier, 1831**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Heniochus varius* (Cuvier, 1829)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1995 Green et al. 1999 Fagatele Bay
2002 present study

Family Pomacanthidae

***Apolemichthys trimaculatus* (Cuvier, 1831)**

1995 Green et al. 1999 Fagatele Bay
1985 Birkeland et al. 1987 (as *Holacanthus trimaculatus*) Fagatele Bay

***Centropyge aurantia* Randall & Wass 1974**

1971 BPBM-11334 Fagasā Bay

***Centropyge bicolor* (Bloch, 1787)**

1974 Dames & Moore 1974 Ava Point
1976 BPBM-20001 Fagatele Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Centropyge bispinosa* (Günther, 1860)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Centropyge flavissima* (Cuvier, 1831)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Centropyge heraldi* Woods & Schultz, 1953**

1973 BPBM-14999 Fagatele Bay

***Centropyge loricula* (Günther, 1860)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pomacanthus imperator* (Bloch, 1787)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
2002 present study

***Pygoplites diacanthus* (Boddaert, 1772)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Family Pomacentridae

***Abudefduf septemfasciatus* (Cuvier, 1830)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Abudefduf sexfasciatus* (Lacépède, 1801)**

1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Onesosopo
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Abudefduf sordidus* (Forsskål, 1775)**

1974 Dames & Moore 1974 Ava Point
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

***Abudefduf vaigiensis* (Quoy & Gaimard. 1825)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Amblyglyphidodon leucogaster* (Bleeker, 1847)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Utulei

***Amblyglyphidodon orbicularis* (Hombron & Jacquinot, 1853)**

1974 BPBM-17506 Fagatele Bay

***Amphiprion chrysopterus* Cuvier, 1830**

1974 Dames & Moore 1974 (as *Amphiprion bicinctus*) Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Amphiprion clarkii* (Bennett, 1830)**

2002 present study

***Amphiprion melanopus* Bleeker, 1852**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Chromis acares* Randall & Swerdloff, 1973**

1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay
1979 USACE 1980 Fagatele Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chromis agilis* Smith, 1960**

1985 Birkeland et al. 1987 Fagatele Bay

***Chromis alpha* Randall, 1988**

1971 BPBM-16006 Fagasā Bay
1971 BPBM-30570 Fagasā Bay
1974 BPBM-17346 Aūa

***Chromis amboinensis* (Bleeker, 1873)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chromis atripectoralis* Welander & Schultz, 1951**

1971 BPBM-11336 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Chromis iomelas* Jordan & Seale, 1906**

1974 Randall & Devaney 1974 Vatia Bay
1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chromis lepidolepis* Bleeker, 1877**

1974 Dames & Moore 1974 Ava Point

***Chromis margaritifer* Fowler, 1946**

1974 Dames & Moore 1974 (as *Chromis dimidiatus*) Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chromis opercularis* (Günther, 1867)**

1974 Dames & Moore 1974 Ava Point

***Chromis ternatensis* (Bleeker, 1856)**

1974 Dames & Moore 1974 Ava Point

***Chromis vanderbilti* (Fowler, 1941)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Chromis viridis* (Cuvier, 1830)**

1974 Randall & Devaney 1974 (as *Chromis caeruleus*) Vatia Bay
1974 Dames & Moore 1974 (as *Chromis caeruleus*) Ava Point
1979 USACE 1980 (as *Chromis caerulea*) Vatia Bay
1979 USACE 1980 (as *Chromis caeruleus*) Aūa
2002 present study

***Chromis xanthura* (Bleeker, 1854)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chromis* sp.**

1902 BPBM-4452 Pago Pago Harbor

***Chrysiptera biocellata* (Quoy & Gaimard, 1825)**

1974 Dames & Moore 1974 (as *Abudefduf biocellatus*) Ava Point
1979 USACE 1980 (as *Glyphidodontops biocellatus*) Vatia Bay
1979 USACE 1980 (as *Glyphidodontops biocellatus*) Fagatogo
1979 USACE 1980 (as *Abudefduf biocellatus*) Aūa
1979 USACE 1980 (as *Glyphidodontops biocellatus*) Aūa
2002 present study

***Chrysiptera brownriggii* (Bennett, 1828)**

2002 present study

***Chrysiptera cyanea* (Quoy & Gaimard, 1825)**

1971 BPBM-11313 Fagasā Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 (as *Glyphidodontops cyanea*) Utulei
1979 USACE 1980 (as *Glyphidodontops cyanea*) Aūa
1979 USACE 1980 (as *Glyphidodontops cyanea*) Fagasā Bay
1979 USACE 1980 (as *Glyphidodontops cyanea*) Fagatele Bay

***Chrysiptera cyanea* (Quoy & Gaimard, 1825)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chrysiptera glauca* (Cuvier, 1830)**

1974 Dames & Moore 1974 (as *Abudefduf glaucus*) Ava Point
1974 Randall & Devaney 1974 (as *Glyphidodontops glaucus*) Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 (as *Glyphidodontops glaucus*) Vatia Bay
1979 USACE 1980 (as *Glyphidodontops glaucus*) Leloaloa
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Chrysiptera leucopoma* (Cuvier, 1830)**

1974 Randall & Devaney 1974 (as *Glyphidodontops leucopomus*) Vatia Bay
1979 Wass (in Sea Engineering 1986) (as *Plectroglyphldodon leucozona*) Rainmaker Hotel
1979 USACE 1980 (as *Glyphidodontops leucopomus*) Utulei
1979 USACE 1980 (as *Glyphidodontops leucopomus*) Aūa
1979 USACE 1980 (as *Glyphidodontops leucopomus*) Vatia Bay
1979 USACE 1980 (as *Glyphidodontops leucopomus*) Fagatele Bay
1979 USACE 1980 (as *Glyphidodontops leucopomus*) Fagasā Bay
1979 USACE 1980 (as *Glyphidodontops leucopomus*) Leloaloa
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Chrysiptera tricincta* (Allen & Randall, 1974)**

1971 BPBM-11308 Fagasā Bay
1974 BPBM-16793 Aūa
No date BPBM-5371 (as *Glyphidodontops tricinctus*) Pago Pago Harbor

***Dascyllus aruanus* (Linnaeus, 1758)**

1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Aūa
2002 present study

***Dascyllus reticulatus* (Richardson, 1846)**

1995 Green et al. 1999 Fagatele Bay
2002 present study

***Dascyllus trimaculatus* (Rüppell, 1829)**

1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Fagasā Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Lepidozygus tapeinosoma* (Bleeker, 1854)**

1995 Green et al. 1999 Fagatele Bay

***Neopomacentrus metallicus* (Jordan & Seale, 1906)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1995 Green et al. 1999 Fagatele Bay
2002 present study (as *Neopomacentrus metallicus*)

***Plectroglyphidodon dickii* (Lienard, 1839)**

1974 Dames & Moore 1974 (as *Abudefduf dicki*) Ava Point
1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Fagatele Bay
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Plectroglyphidodon imparipennis* (Vaillant & Sauvage, 1875)**

1974 Dames & Moore 1974 (as *Abudefduf ?imparipennis*) Ava Point

***Plectroglyphidodon johnstonianus* Fowler & Ball, 1924**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Plectroglyphidodon lacrymatus* (Quoy & Gaimard, 1824)**

1974 Randall & Devaney 1974 Vatia Bay
1974 Dames & Moore 1974 (as *Abudefduf lacrymatus*) Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Plectroglyphidodon leucozona* (Bleeker 1859)**

1985 Birkeland et al. 1987 Fagatele Bay

***Plectroglyphidodon phoenixensis* (Schultz, 1943)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Pomacentrus brachialis* Cuvier, 1830**

1979 USACE 1980 (as *Pomocentrus melanopterus*) Leloaloa
1979 USACE 1980 (as *Pomocentrus melanopterus*) Onesosopo
1979 USACE 1980 (as *Pomocentrus melanopterus*) Utulei
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1979 USACE 1980 (as *Pomocentrus melanopterus*) Aūa
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Pomacentrus coelestis* Jordan & Starks, 1901**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study
No date BPBM-5368 Pago Pago Harbor

***Pomacentrus nigromarginatus* Allen, 1973**

1979 USACE 1980 Aūa

***Pomacentrus philippinus* Evermann & Seale, 1907**

1929 BPBM-5197 Pago Pago Harbor

1971 BPBM-38948 Fagasā Bay

***Pomacentrus vaiuli* Jordan & Seale, 1906**

1974 Randall & Devaney 1974 Vatia Bay

1974 Dames & Moore 1974 Ava Point

1979 USACE 1980 Vatia Bay

1979 USACE 1980 Utulei

1979 USACE 1980 Aūa

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

2002 present study

***Pomachromis richardsoni* (Snyder, 1909)**

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

***Pomachromis* sp.**

2002 present study

***Pristotis obtusirostris* (Günther , 1862)**

1995 Green et al. 1999 (as *Pristotis jerdoni*) Fagatele Bay

***Stegastes albifasciatus* (Schlegel & Müller, 1839)**

1971 BPBM-11342 Fagasā Bay

1974 BPBM-17563 Fagatele Bay

1974 Randall & Devaney 1974 (as *Eupomacentrus albofasciatus*) Vatia Bay

1979 USACE 1980 Utulei

1979 USACE 1980 Aūa

1979 USACE 1980 Utulei

1979 USACE 1980 Fagatele Bay

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

1979 USACE 1980 Fagasā Bay

1979 USACE 1980 Vatia Bay

1995 Green et al. 1999 Fagatele Bay

***Stegastes albifasciatus* (Schlegel & Müller, 1839)**

2002 present study

***Stegastes fasciolatus* (Ogilby, 1889)**

1971 BPBM-11328 Fagasā Bay

1979 USACE 1980 Fagasā Bay

1979 USACE 1980 Vatia Bay

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

2002 present study

***Stegastes nigricans* (Lacépède, 1802)**

1974 Dames & Moore 1974 Ava Point

1974 BPBM-17495 Fagatele Bay

1979 USACE 1980 Utulei

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

2002 present study

Family Cirrhitidae

***Cirrhitus pinnulatus* (Bloch & Schneider, 1801)**

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

***Paracirrhites arcatus* (Cuvier, 1829)**

1985 Birkeland et al. 1987 Fagatele Bay

1995 Green et al. 1999 Fagatele Bay

2002 present study

***Paracirrhites forsteri* (Bloch & Schneider, 1801)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Paracirrhites hemistictus* (Günther, 1874)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

Order Pleuronectiformes

Family Soleidae

***Pardachirus pavoninus* (Lacépède, 1802)**

2002 present study

Order Tetraodontiformes

Family Tetraodontidae

***Arothron mappa* (Lesson, 1831)**

1973 BPBM-14994 Aūa

***Arothron meleagris* (Lacépède, 1798)**

1974 Dames & Moore 1974 Ava Point
2002 present study

***Arothron nigropunctatus* (Bloch & Schneider, 1801)**

1971 BPBM-11330 Fagasā Bay
1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Canthigaster amboinensis* (Bleeker, 1865)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

***Canthigaster janthinoptera* (Bleeker, 1855)**

1930 BPBM-5000 Fagasā Bay

***Canthigaster solandri* (Richardson, 1845)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Canthigaster valentini* (Bleeker, 1853)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
2002 present study

Family Balistidae

***Balistapus undulatus* (Park, 1797)**

1974 Dames & Moore 1974 Ava Point
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Balistoides conspicillum* (Bloch & Schneider, 1801)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Balistoides viridescens* (Bloch & Schneider, 1801)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Melichthys niger* (Bloch, 1786)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Melichthys vidua* (Solander, 1844)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pseudobalistes flavimarginatus* (Rüppell, 1829)**

2002 present study

***Rhinecanthus aculeatus* (Linnaeus, 1758)**

1974 Dames & Moore 1974 Ava Point
2002 present study

***Rhinecanthus rectangulus* (Bloch & Schneider, 1801)**

1974 Randall & Devaney 1974 Vatia Bay
1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Sufflamen bursa* (Bloch & Schneider, 1801)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Sufflamen chrysopterum* (Bloch & Schneider, 1801)**

2002 present study

***Sufflamen fraenatus* (Latrielle, 1804)**

1971 BPBM-11332 Fagasā Bay

Family Monacanthidae

***Aluterus scriptus* (Osbeck, 1765)**

1995 Green et al. 1999 Fagatele Bay

***Amanses scopas* (Cuvier, 1829)**

1974 Randall & Devaney 1974 Vatia Bay
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Cantherhines dumerilii* (Holland, 1854)**

1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Cantherhines pardalis* (Rüppell, 1837)**

1979 Wass (in Sea Engineering 1986) Rainmaker Hotel
1985 Birkeland et al. 1987 Fagatele Bay

***Oxymonacanthus longirostris* (Bloch & Schneider, 1801)**

1974 Randall & Devaney 1974 Vatia Bay
1974 Dames & Moore 1974 Ava Point
1979 USACE 1980 Vatia Bay
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay
2002 present study

***Pervagor janthinosoma* (Bleeker, 1854)**

2002 present study

***Pervagor melanocephalus* (Bleeker, 1853)**

1974 Dames & Moore 1974 Ava Point
1985 Birkeland et al. 1987 Fagatele Bay
1995 Green et al. 1999 Fagatele Bay

Family Diodontidae

***Diodon liturosus* Shaw, 1804**

2002 present study

***Diodon* sp.**

1974 Dames & Moore 1974 Ava Point

APPENDIX C

Taxa Observed or collected from 10 Stations in Pago Pago Harbor, Fagatele Bay, Vatia Bay, or Fagasā Bay, October 2002

Taxa	Family	Species	Status	Station									
				1	2	3	4	5	6	7	8	9	10
CYANOPHYTA	NOSTOCACEAE	*Anabaina* sp.								x			
CYANOPHYTA	OSCILLATORIACEAE	*Lyngbya confervoides*							x			x	x
CYANOPHYTA	OSCILLATORIACEAE	*Lyngbya majuscula*								x		x	x
CYANOPHYTA	OSCILLATORIACEAE	*Lyngbya semiplena*								x			
CYANOPHYTA	OSCILLATORIACEAE	*Lyngbya sp.*											
CYANOPHYTA	OSCILLATORIACEAE	*Oscillatoria cf. bonnemasonii*				x							
CYANOPHYTA	OSCILLATORIACEAE	*Oscillatoria* sp.					x						
CYANOPHYTA	PHORMIDIACEAE	*Phormidium* cf. *laysanense*										x	
CYANOPHYTA	PHORMIDIACEAE	*Phormidium penicilliatum*											x
CYANOPHYTA	PHORMIDIACEAE	*Phormidium* sp.		x	x	x							
CYANOPHYTA	PHORMIDIACEAE	*Phormidium submembranaceum*											x
CYANOPHYTA	SCHIZOTHRICHACEAE	*Schizothrix mexicana*				x							
CYANOPHYTA	SCHIZOTHRICHACEAE	*Schizothrix* sp.		x	x								
CHLOROPHYTA	POLYPHYSACEAE	*Acetabularia exigua*				x							
CHLOROPHYTA	POLYPHYSACEAE	*Acetabularia parvula*				x							
CHLOROPHYTA	CLODOPHORALES	*Boodlea montagnei*		x	x	x							
CHLOROPHYTA	CLODOPHORALES	*Boodlea vanbosseae*							x				
CHLOROPHYTA	BRYOPSIDACEAE	*Bryopsis pennata*		x	x	x			x	x			x
CHLOROPHYTA	CAULERPACEAE	*Caulerpa peltata*		x	x	x			x		x		x
CHLOROPHYTA	CAULERPACEAE	*Caulerpa racemosa* var. *peltata*				x							
CHLOROPHYTA	CAULERPACEAE	*Caulerpa serrulata*	Cryptogenic	x	x	x			x				x
CHLOROPHYTA	CAULERPACEAE	*Caulerpella ambigua*		x	x								
CHLOROPHYTA	UDOTEACEAE	*Chlorodesmis fastigiata*		x	x				x	x			
CHLOROPHYTA	CLODOPHORACEAE	*Cladophora* cf. *limicola*										x	
CHLOROPHYTA	SIPHONOCLADACEAE	*Cladophoropsis carolinensis*								x			
CHLOROPHYTA	SIPHONOCLADACEAE	*Cladophoropsis herpestica*									x		
CHLOROPHYTA	SIPHONOCLADACEAE	*Cladophoropsis* sp.		x	x								
CHLOROPHYTA	CODIACEAE	*Codium* cf. *mamillosum*				x							
CHLOROPHYTA	DERBESIACEAE	*Derbesia marina*		x	x								
CHLOROPHYTA	SIPHONOCLADACEAE	*Dictyosphaeria* cf. *cavernosa*							x				
CHLOROPHYTA	CLODOPHORALES	*Dictyosphaeria versluysii*		x	x	x			x	x			
CHLOROPHYTA	ULVACEAE	*Enteromorpha ?intestinalis*						x					
CHLOROPHYTA	ULVACEAE	*Enteromorpha clathrata*				x				x			
CHLOROPHYTA	ULVACEAE	*Enteromorpha compressa*				x							
CHLOROPHYTA	ULVACEAE	*Enteromorpha* sp.				x	x						
CHLOROPHYTA	HALIMEDACEAE	*Halimeda gracilis*									x	x	
CHLOROPHYTA	HALIMEDACEAE	*Halimeda incrassata*				x							
CHLOROPHYTA	HALIMEDACEAE	*Halimeda minima*											x
CHLOROPHYTA	HALIMEDACEAE	*Halimeda opuntia*				x							

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
CHLOROPHYTA	CLODOPHORACEAE	*Rhizoclonium africanum*		x	x		x			x			
CHLOROPHYTA	CHROOLEPIDACEAE	*Sporocladopsis erythraea*										x	
CHLOROPHYTA	VALONIACEAE	*Valonia* cf. *aegagropila*										x	
CHLOROPHYTA	VALONIACEAE	*Valonia fastigiate*		x	x	x				x			x
CHLOROPHYTA	SIPHONOCLADACEAE	*Ventricaria ventricosa*				x							x
CHLOROPHYTA	CLODOPHORACEAE	*Cladophora* sp.				x			x	x			
CHLOROPHYTA	HALIMEDACEAE	*Halimeda* sp.										x	
PHAEOPHYTA	CHNOOSPORACEAE	*Chnoospora implexa*		x	x								
PHAEOPHYTA	DICTYOTACEAE	*Dictyopteris repens*		x	x	x						x	x
PHAEOPHYTA	DICTYOTACEAE	*Dictyota bartayresiana*				x							x
PHAEOPHYTA	DICTYOTACEAE	*Dictyota friabilis*		x	x	x							x
PHAEOPHYTA	ECTOCARPACEAE	*Feldmannia indica*										x	
PHAEOPHYTA	ECTOCARPACEAE	*Hincksia breviarticulata*		x	x								
PHAEOPHYTA	DICTYOTACEAE	*Lobophora variegata*		x	x	x				x		x	
PHAEOPHYTA	SARGASSEACEAE	*Sargassum anapense*										x	
PHAEOPHYTA	SARGASSEACEAE	*Turbinaria ornata*				x							x
RHODOPHYTA	GALAXAURACEAE	*Actinotrichia fragilis*		x	x	x							x
RHODOPHYTA	CERAMIACEAE	*Aglaothamnion* sp.									x		
RHODOPHYTA	CORALLINACEAE	*Amphiroa foliacea*		x	x	x						x	x
RHODOPHYTA	CORALLINACEAE	*Amphiroa* sp.				x			x	x	x		
RHODOPHYTA	CERAMIACEAE	*Antithamnion decipiens*										x	
RHODOPHYTA	CERAMIACEAE	*Antithamnionella breviramosa*					x						
RHODOPHYTA	CERAMIACEAE	*Antithamnionella* sp.							x				
RHODOPHYTA	BONNEMAISONIACEAE	*Asparagopsis taxiformis*										x	
RHODOPHYTA	CERAMIACEAE	*Balliela repens*										x	
RHODOPHYTA	RHODOMELACEAE	*Bostrychia tenella*		x	x								
RHODOPHYTA	RHODYMENIACEAE	*Botryocladia* sp.									x		
RHODOPHYTA	CAULICANTHACEAE	*Caulacanthus ustulatus*								x			x
RHODOPHYTA	CERAMIACEAE	*Centroceras clavulatum*					x			x			x
RHODOPHYTA	CERAMIACEAE	*Ceramium affine*											x
RHODOPHYTA	CERAMIACEAE	*Ceramium borneense*				x							
RHODOPHYTA	CERAMIACEAE	*Ceramium* cf. *marshallense*										x	
RHODOPHYTA	CERAMIACEAE	*Ceramium flaccidum*		x	x	x			x	x			
RHODOPHYTA	CERAMIACEAE	*Ceramium krameri*								x	x		x
RHODOPHYTA	CERAMIACEAE	*Ceramium macilentum*							x				
RHODOPHYTA	CERAMIACEAE	*Ceramium* sp.								x			
RHODOPHYTA	CERAMIACEAE	*Champia parvula*		x	x								
RHODOPHYTA	CERAMIACEAE	*Champia viellardii*											x
RHODOPHYTA	CERAMIACEAE	*Cheilosporum acutilobum*							x				x

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
RHODOPHYTA	CERAMIACEAE	*Cheilosporum spectabile*		x	x	x							x
RHODOPHYTA	GIGARTINACEAE	*Chondracanthus tenellus*							x				
CHLOROPHYTA	RHODOMELACEAE	*Chondraphycus succisca*										x	x
CHLOROPHYTA	RHODOMELACEAE	*Chondria* cf. *polyrhiza*				x				x	x		
CHLOROPHYTA	RHODOMELACEAE	*Chondria minutula*							x				
CHLOROPHYTA	RHODOMELACEAE	*Chondria simpliciuscula*							x				x
CHLOROPHYTA	RHODOMELACEAE	*Chondria* sp.							x				
RHODOPHYTA	CORALLINACEAE	*Choreonema thuretti*										x	
RHODOPHYTA	CORALLINACEAE	*Chrysemnia kaernbachii*											x
RHODOPHYTA	RHODYMENIACEAE	*Coelothrix irregularis*				x						x	
RHODOPHYTA	CORALLINACEAE	*Coralline* sp.				x				x			
RHODOPHYTA	CERAMIACEAE	*Crouania attenuate*		x	x								
RHODOPHYTA	HALYMENIACEAE	*Cryptonemia decumbens*		x	x								
RHODOPHYTA	DASYACEAE	*Dasya anastomosans*										x	x
RHODOPHYTA	ERYTHRICHIACEAE	*Erythrotrichia* sp.					x						
RHODOPHYTA	GALAXAURACEAE	*Galaxaura filamentosa*		x	x	x				x		x	x
RHODOPHYTA	GALAXAURACEAE	*Galaxaura marginata*				x				x			x
RHODOPHYTA	GELIDIELLACEAE	*Gelidiella acerosa*										x	
RHODOPHYTA	RHODYMENIACEAE	*Gelidiopsis intricata*				x				x			
RHODOPHYTA	RHODYMENIACEAE	*Gelidiopsis repens*		x	x	x			x	x	x	x	x
RHODOPHYTA	GELIDIACEAE	*Gelidium* cf. *pusillum*							x	x	x	x	
RHODOPHYTA	GELIDIACEAE	*Gelidium samoense*				x							x
RHODOPHYTA	GELIDIACEAE	*Gelidium* sp.				x			x				
RHODOPHYTA	HALYMENIACEAE	*Grateloupia* cf. *filicina*					x						
RHODOPHYTA	CERAMIACEAE	*Griffithsia* sp.				x							
RHODOPHYTA	CERAMIACEAE	*Griffithsia subcylindrica*				x							
RHODOPHYTA	FAUCHEACEAE	*Halichrysis coalescens*							x				x
RHODOPHYTA	CERAMIACEAE	*Haloplegma duperreyi*											x
RHODOPHYTA	HALYMENIACEAE	*Halymenia durvillei*	Cryptogenic	x	x	x							
RHODOPHYTA	RHODOMELACEAE	*Herposiphonia delicatula*		x	x							x	
RHODOPHYTA	RHODOMELACEAE	*Herposiphonia secunda f. tenella*				x							
RHODOPHYTA	RHODOMELACEAE	*Herposiphonia* sp.				x				x			x
RHODOPHYTA	DASYACEAE	*Heterosiphonia crispella*										x	
RHODOPHYTA	CORALLINACEAE	*Hydrolithon onkodes*		x	x					x			
RHODOPHYTA	CORALLINACEAE	*Hydrolithon* sp.		x	x								
RHODOPHYTA	HYPNEACEAE	*Hypnea pannosa*		x	x	x			x	x			
RHODOPHYTA	HYPNEACEAE	*Hypnea* sp.				x							
RHODOPHYTA	HYPNEACEAE	*Hypnea spinella*							x				x
RHODOPHYTA	DELESSERIACEAE	*Hypoglossum anomalum*				x							

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
RHODOPHYTA	DELESSERIACEAE	*Hypoglossum simulans*		x	x								
RHODOPHYTA	CORALLINACEAE	*Jania* cf. *adhaerens*				x	x		x	x		x	
RHODOPHYTA	CORALLINACEAE	*Jania* cf. *pumila*							x				
RHODOPHYTA	CORALLINACEAE	*Jania* sp.							x				x
RHODOPHYTA	RHODOMELACEAE	*Laurencia* sp.										x	x
RHODOPHYTA	CORALLINACEAE	*Lithophyllum kotschyanum*								x			
RHODOPHYTA	CORALLINACEAE	*Lithophyllum pygmaeum*											x
RHODOPHYTA	CORALLINACEAE	*Lithothamion proliferum*		x	x					x			
RHODOPHYTA	LOMENTARIACEAE	*Lomentaria corallicola*				x			x				
RHODOPHYTA	DELESSERIACEAE	*Martensia fragilis*										x	
RHODOPHYTA	CORALLINACEAE	*Mastophora pacifica*		x	x								x
RHODOPHYTA	CORALLINACEAE	*Mesophyllum* sp.		x	x								
RHODOPHYTA	DELESSERIACEAE	*Myriogramme* sp.		x	x								
RHODOPHYTA	CORALLINACEAE	*Neogoniolithon cf clavacymosum*		x	x								
RHODOPHYTA	CORALLINACEAE	*Neogoniolithon* sp.		x	x				x				
RHODOPHYTA	PEYSONNELIACEAE	*Peyssonnelia* cf. *bornetii*									x		
RHODOPHYTA	PEYSONNELIACEAE	*Peyssonnelia* cf. *delicata*										x	
RHODOPHYTA	PEYSONNELIACEAE	*Peyssonnelia* cf. *flavescens*				x			x				
RHODOPHYTA	PEYSONNELIACEAE	*Peyssonnelia* cf. *inamoena*				x					x		x
RHODOPHYTA	PEYSONNELIACEAE	*Peyssonnelia* sp.		x	x	x			x				x
RHODOPHYTA	RHODOMELACEAE	*Polysiphonia (Neosiphonia) howei*		x	x					x			
RHODOPHYTA	RHODOMELACEAE	*Polysiphonia (Neosiphonia) savatieri*								x			
RHODOPHYTA	RHODOMELACEAE	*Polysiphonia (Neosiphonia) scopulorum*		x	x								
RHODOPHYTA	RHODOMELACEAE	*Polysiphonia (Neosiphonia)* sp.		x	x						x		
RHODOPHYTA	RHODOMELACEAE	*Polysiphonia (Neosiphonia) sparsa*							x				
RHODOPHYTA	RHODOMELACEAE	*Polysiphonia (Neosiphonia) sphaerocarpa*				x							
RHODOPHYTA	SCHIZYMENIACEAE	*Titanophora weberae*		x	x								
RHODOPHYTA	RHODOMELACEAE	*Tolypiocladia glomerulata*											x
RHODOPHYTA	CERAMIACEAE	*Wrangelia argus*		x	x								
MAGNOLIOPHYTA	HYDROCHATIALES	*Halophila ovalis*				x			x	x	x		
PORIFERA	CLATHRINIDAE	*Clathrina* sp.		x									x
PORIFERA	LEUCETTIDAE	*Leucetta* cf. *chagosensis*				x			x	x	x	x	x
PORIFERA	LEUCETTIDAE	*Leucetta* sp.										x	x
PORIFERA	UNID. CALCAREA	unid. Calcarea					x			x			
PORIFERA	TETILLIDAE	*Cinachyra* sp.				x	x		x	x			x
PORIFERA	TETILLIDAE	*Craniella abracadabra*		x		x			x	x			
PORIFERA	TETILLIDAE	*Paratetilla bacca*		x				x					

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
PORIFERA	COPPATIIDAE	*Jaspis* sp.		x									
PORIFERA	CRANIELLIDAE	*Cynachyra* sp.				x							
PORIFERA	POLYMASTIIDAE	*Polymastia* sp.								x			x
PORIFERA	SPIRASTRELLIDAE	*Spirastrella* sp.											x
PORIFERA	TETHYIDAE	*Tethya* sp.					x						
PORIFERA	AGELASIDAE	*Agelas* sp. 1									x		
PORIFERA	AGELASIDAE	*Agelas* sp. 2		x	x						x		
PORIFERA	DESMACELLIDAE	*Biemna* sp.					x						
PORIFERA	MYCALIDAE	*Mycale* sp.					x		x				
PORIFERA	AXINELLIDAE	*Axinella ?carteri*			x								
PORIFERA	AXINELLIDAE	*Phakellia cavernosa*							x				x
PORIFERA	AXINELLIDAE	*Stylissa ?flabelliformis*		x					x	x	x		x
PORIFERA	AXINELLIDAE	*Stylissa massa*				x	x		x	x	x	x	x
PORIFERA	HALICHONDRIIDAE	*Axinyssa* sp.					x						
PORIFERA	HALICHONDRIIDAE	*Halichondria* sp. 1											
PORIFERA	HALICHONDRIIDAE	*Halichondria* sp. 2							x				
PORIFERA	CALLYSPONGIIDAE	*Callyspongia (Callyspongia)* sp.									x		
PORIFERA	CALLYSPONGIIDAE	*Callyspongia (Cladochalina)* sp.							x				
PORIFERA	CALLYSPONGIIDAE	*Callyspongia* sp.					x						
PORIFERA	CHALINIDAE	*Haliclona (Haliclona)* sp.		x							x		
PORIFERA	CHALINIDAE	*Haliclona (Reniera)* sp.											x
PORIFERA	CHALINIDAE	*Haliclona (Sigmadocia)* sp.									x		
PORIFERA	PETROSIIDAE	*Xestospongia* sp.									x		
PORIFERA	THORECTIDAE	*Hyrtios erecta*		x							x	x	
PORIFERA	THORECTIDAE	*Hyrtios* sp.							x				
PORIFERA	THORECTIDAE	*Psammocinia* sp.		x								x	x
PORIFERA	DYSIDEIDAE	*Dysidea herbacea*											x
PORIFERA	DYSIDEIDAE	*Dysidea* sp.		x		x			x				x
PORIFERA	DYSIDEIDAE	*Dysidea* sp. 1							x				
PORIFERA	DYSIDEIDAE	*Dysidea* sp. 2			x								x
PORIFERA	DYSIDEIDAE	*Dysidea* sp. 3							x				
PORIFERA	DYSIDEIDAE	*Euryspongia delicata*				x							
PORIFERA	DARWINELLIDAE	*Chelonaplysilla* sp.									x		
PORIFERA	DARWINELLIDAE	*Dendrilla* sp.		x									
PORIFERA	DARWINELLIDAE	*Pleuraplysilla* sp.								x			
PORIFERA	DICTYODENDRILLIDAE	*Dictyodendrilla* sp.									x		
HYDROIDA	AGALOPHENIIDAE	*Aglaophenid* (fragment)							x				
HYDROIDA	AGALOPHENIIDAE	*Gymnangium eximium*		x									
HYDROIDA	AGALOPHENIIDAE	*Gymnangium hians*										x	

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
HYDROIDA	AGALOPHENIIDAE	*Lytocarpia brevirostris*		x	x								
HYDROIDA	AGALOPHENIIDAE	*Lytocarpia phyteuma*								x	x		
HYDROIDA	CLAVIDAE	*Turritopsis nutricula*	Introduced			x							
HYDROIDA	EUDENDRIIDAE	*Eudendrium* sp.		x						x			
HYDROIDA	EUDENDRIIDAE	*Myrionema amboinense*				x							
HYDROIDA	HALECIIDAE	*Halecium* sp. (fragment)							x	x			
HYDROIDA	HALOCORDYLIDAE	*Pennaria disticha*	Introduced			x	x	x	x		x		
HYDROIDA	LAFOEIDAE	*Hebellopsis scandens*									x		
HYDROIDA	LAFOEIDAE	*Zygophylax rufa*								x			
HYDROIDA	PLUMULARIIDAE	*Kirchenpaueria irregularis*						x					
HYDROIDA	PLUMULARIIDAE	*Plumularia spiralis*									x		
HYDROIDA	PLUMULARIIDAE	*Plumularia strictocarpa*	Cryptogenic		x					x	x		
HYDROIDA	PLUMULARIIDAE	*Plumularia strobilophora*		x									
HYDROIDA	SERTULARIIDAE	*Dynamena crisioides*	Cryptogenic				x		x				
HYDROIDA	SERTULARIIDAE	*Sertularella diaphana*	Cryptogenic										x
HYDROIDA	SERTULARIIDAE	*Sertularella orthogonalis*		x									x
HYDROIDA	SERTULARIIDAE	*Sertularella robusta*								x			
HYDROIDA	SERTULARIIDAE	*Sertularia malayensis*									x		
HYDROIDA	SERTULARIIDAE	*Thyroscyphus fruticosus*	Cryptogenic			x			x		x		
MILLEPORINA	MILLEPORIDAE	*Millepora dichotoma*		x					x			x	
MILLEPORINA	MILLEPORIDAE	*Millepora platyphylla*		x	x	x			x	x	x	x	x
MILLEPORINA	MILLEPORIDAE	*Millepora tuberosa*		x								x	x
STYLASTERINA	STYLASTERIIDAE	*Distichopora* sp.		x	x	x						x	x
STYLASTERINA	STYLASTERIIDAE	*Stylaster* sp.		x	x	x			x	x	x	x	x
GORGONACEA	MELITHAEIDAE	*Acabaria bicolor*							x				
GORGONACEA	MELITHAEIDAE	*Acabaria* sp.							x				
GORGONACEA	PLEXAURIDAE	cf. *Villagorgia* sp.							x				
GORGONACEA	PLEXAURIDAE	*Villagorgia* sp.							x				
GORGONACEA	UNID. GORGONACEA	*Gorgonian* sp. 1								x	x		
GORGONACEA	UNID. GORGONACEA	*Gorgonian* sp. 2								x			
ALCYONACEA	ALCYONIIDAE	*Cladiella* sp.			x	x			x			x	
ALCYONACEA	ALCYONIIDAE	*Lobophytum* spp.			x	x			x	x	x	x	
ALCYONACEA	ALCYONIIDAE	*Sarcophyton* sp.			x				x	x			
ALCYONACEA	NEPHTHEIDAE	*Dendronepthea* sp. 1-white								x			
ALCYONACEA	NEPHTHEIDAE	*Dendronepthea* sp. 2-lumpy								x			
ALCYONACEA	NEPHTHEIDAE	*Dendronepthea* sp. 3-red								x	x		
HELIOPORACEA	HELIOPORIDAE	*Heliopora coerulea*		x								x	
ACTINIARIA	ACTINIIDAE	*Entacmaea quadricolor*			x	x			x		x	x	
ACTINIARIA	STICHODACTYLIDAE	*Heteractis* sp.							x				x

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				1	2	3	4	5	6	7	8	9	10
SCLERACTINIA	ACROPORIDAE	*Acropora ?donei*							x				
SCLERACTINIA	ACROPORIDAE	*Acropora ?horrida*							x			x	
SCLERACTINIA	ACROPORIDAE	*Acropora ?latistella*		x	x							x	x
SCLERACTINIA	ACROPORIDAE	*Acropora ?prostrata*		x					x			x	x
SCLERACTINIA	ACROPORIDAE	*Acropora ?pulchra*											
SCLERACTINIA	ACROPORIDAE	*Acropora ?robusta*		x					x			x	
SCLERACTINIA	ACROPORIDAE	*Acropora ?yongei*		x		x			x			x	
SCLERACTINIA	ACROPORIDAE	*Acropora abrotanoides*		x	x	x			x		x	x	
SCLERACTINIA	ACROPORIDAE	*Acropora acuminata*		x		x			x	x			
SCLERACTINIA	ACROPORIDAE	*Acropora* aff. *cophodactyla*		x	x				x		x	x	x
SCLERACTINIA	ACROPORIDAE	*Acropora* aff. *valida*							x			x	
SCLERACTINIA	ACROPORIDAE	*Acropora austera*		x									
SCLERACTINIA	ACROPORIDAE	*Acropora* cf. *austera*		x		x			x				
SCLERACTINIA	ACROPORIDAE	*Acropora* cf. *diversa*										x	
SCLERACTINIA	ACROPORIDAE	*Acropora* cf. *globiceps*		x	x	x			x	x		x	
SCLERACTINIA	ACROPORIDAE	*Acropora* cf. *granulosa*			x	x				x	x	x	
SCLERACTINIA	ACROPORIDAE	*Acropora* cf. *quelchi*		x	x							x	x
SCLERACTINIA	ACROPORIDAE	*Acropora clathrata*		x	x				x		x	x	x
SCLERACTINIA	ACROPORIDAE	*Acropora crateriformis*		x	x	x			x			x	
SCLERACTINIA	ACROPORIDAE	*Acropora cytherea*		x	x	x					x	x	
SCLERACTINIA	ACROPORIDAE	*Acropora digitifera*				x			x			x	
SCLERACTINIA	ACROPORIDAE	*Acropora gemmifera*		x	x	x			x			x	x
SCLERACTINIA	ACROPORIDAE	*Acropora granulosa*				x							
SCLERACTINIA	ACROPORIDAE	*Acropora humilis*		x	x	x			x	x	x	x	x
SCLERACTINIA	ACROPORIDAE	*Acropora hyacinthus*		x	x	x			x		x	x	x
SCLERACTINIA	ACROPORIDAE	*Acropora monticulosa*		x								x	
SCLERACTINIA	ACROPORIDAE	*Acropora muricata*				x			x			x	
SCLERACTINIA	ACROPORIDAE	*Acropora nasuta*										x	
SCLERACTINIA	ACROPORIDAE	*Acropora ?nobilis*							x				
SCLERACTINIA	ACROPORIDAE	*Acropora palifera*		x								x	
SCLERACTINIA	ACROPORIDAE	*Acropora palmerae*		x					x			x	
SCLERACTINIA	ACROPORIDAE	*Acropora paniculata*		x	x	x			x		x	x	x
SCLERACTINIA	ACROPORIDAE	*Acropora samoensis*			x				x			x	
SCLERACTINIA	ACROPORIDAE	*Acropora selago*			x								x
SCLERACTINIA	ACROPORIDAE	*Acropora* sp.							x	x		x	
SCLERACTINIA	ACROPORIDAE	*Acropora* sp. 1		x	x				x			x	x
SCLERACTINIA	ACROPORIDAE	*Acropora* sp. 2		x					x			x	
SCLERACTINIA	ACROPORIDAE	*Acropora* sp. 3										x	x
SCLERACTINIA	ACROPORIDAE	*Acropora tenuis*			x	x						x	

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SCLERACTINIA	ACROPORIDAE	*Acropora valida*		x		x			x			x	
SCLERACTINIA	ACROPORIDAE	*Acropora verweyi*		x					x			x	
SCLERACTINIA	ACROPORIDAE	*Astreopora cucullata*		x	x	x			x	x	x	x	x
SCLERACTINIA	ACROPORIDAE	*Astreopora listeri*										x	
SCLERACTINIA	ACROPORIDAE	*Astreopora myriophthalma*		x	x	x			x	x	x	x	
SCLERACTINIA	ACROPORIDAE	*Astreopora randalli*			x								x
SCLERACTINIA	ACROPORIDAE	*Montipora ?aequituberculata*		x	x	x			x		x	x	x
SCLERACTINIA	ACROPORIDAE	*Montipora berryi*		x	x							x	x
SCLERACTINIA	ACROPORIDAE	*Montipora conicula*											
SCLERACTINIA	ACROPORIDAE	*Montipora ehrenbergii*		x	x	x			x	x	x	x	x
SCLERACTINIA	ACROPORIDAE	*Montipora elshneri*		x		x			x			x	
SCLERACTINIA	ACROPORIDAE	*Montipora floweri*		x	x	x							
SCLERACTINIA	ACROPORIDAE	*Montipora foliosa*		x							x	x	
SCLERACTINIA	ACROPORIDAE	*Montipora grisea*		x	x				x	x	x	x	x
SCLERACTINIA	ACROPORIDAE	*Montipora ?hoffmeisteri*				x			x	x			
SCLERACTINIA	ACROPORIDAE	*Montipora lobulata*		x								x	
SCLERACTINIA	ACROPORIDAE	*Montipora monasteriata*		x					x			x	
SCLERACTINIA	ACROPORIDAE	*Montipora socialis*			x				x				
SCLERACTINIA	ACROPORIDAE	*Montipora* spp.		x		x			x	x	x		x
SCLERACTINIA	ACROPORIDAE	*Montipora tuberculosa*		x					x			x	
SCLERACTINIA	ACROPORIDAE	*Montipora ?turgescens*		x	x							x	
SCLERACTINIA	ACROPORIDAE	*Montipora verrilli*									x		
SCLERACTINIA	ACROPORIDAE	*Montipora verrucosa*		x	x							x	x
SCLERACTINIA	AGARICIIDAE	*Coeloseris mayeri*										x	
SCLERACTINIA	AGARICIIDAE	*Gardineroseris planulata*		x					x				x
SCLERACTINIA	AGARICIIDAE	*Leptoseris explanata*			x				x			x	x
SCLERACTINIA	AGARICIIDAE	*Leptoseris incrustans*		x	x	x			x	x		x	x
SCLERACTINIA	AGARICIIDAE	*Leptoseris mycetoseroides*		x	x	x			x	x	x	x	x
SCLERACTINIA	AGARICIIDAE	*Leptoseris scabra*		x					x	x	x		
SCLERACTINIA	AGARICIIDAE	*Pachyseris speciosa*			x	x			x	x	x	x	x
SCLERACTINIA	AGARICIIDAE	*Pavona clavus*										x	
SCLERACTINIA	AGARICIIDAE	*Pavona decussata*				x			x				
SCLERACTINIA	AGARICIIDAE	*Pavona divaricata*				x			x			x	x
SCLERACTINIA	AGARICIIDAE	*Pavona duerdeni*		x	x							x	
SCLERACTINIA	AGARICIIDAE	*Pavona explanulata*			x	x			x	x	x	x	
SCLERACTINIA	AGARICIIDAE	*Pavona maldivensis*		x	x	x			x	x	x	x	x
SCLERACTINIA	AGARICIIDAE	*Pavona minuta*											x
SCLERACTINIA	AGARICIIDAE	*Pavona* sp. 1 aff. *varians*		x		x			x			x	
SCLERACTINIA	AGARICIIDAE	*Pavona* sp. 2 aff. *varians*		x	x	x			x	x	x	x	x

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SCLERACTINIA	AGARICIIDAE	*Pavona varians*		x	x	x			x	x	x	x	x
SCLERACTINIA	AGARICIIDAE	*Pavona venosa*		x					x				
SCLERACTINIA	ASTROCOENIIDAE	*Stylocoeniella armata*		x	x	x			x	x	x	x	x
SCLERACTINIA	CARYOPHYLLIIDAE	*Euphyllia glabrescens*		x		x					x		x
SCLERACTINIA	DENDROPHYLLIIDAE	*Tubastraea* sp.									x		
SCLERACTINIA	DENDROPHYLLIIDAE	*Turbinarea ?frondens*			x								
SCLERACTINIA	DENDROPHYLLIIDAE	*Turbinarea reniformis*		x					x	x		x	x
SCLERACTINIA	FAVIIDAE	*Caulastrea furcata*											x
SCLERACTINIA	FAVIIDAE	*Cyphastrea chalcidicum*		x	x								x
SCLERACTINIA	FAVIIDAE	*Cyphastrea microphthalma*		x	x	x			x			x	x
SCLERACTINIA	FAVIIDAE	*Cyphastrea serailia*		x	x				x	x	x	x	x
SCLERACTINIA	FAVIIDAE	*Diploastrea heliopora*		x	x	x			x	x	x	x	x
SCLERACTINIA	FAVIIDAE	*Echinopora ?hirsutissima*		x					x	x	x		
SCLERACTINIA	FAVIIDAE	*Echinopora gemmacea*				x			x			x	x
SCLERACTINIA	FAVIIDAE	*Echinopora lamellosa*		x	x				x				x
SCLERACTINIA	FAVIIDAE	*Favia ?danae*										x	
SCLERACTINIA	FAVIIDAE	*Favia favus*		x	x	x			x	x	x		x
SCLERACTINIA	FAVIIDAE	*Favia heliantoides*		x	x				x			x	x
SCLERACTINIA	FAVIIDAE	*Favia matthaii*		x	x	x			x	x	x	x	x
SCLERACTINIA	FAVIIDAE	*Favia pallida*		x		x				x			x
SCLERACTINIA	FAVIIDAE	*Favia rotumana*			x				x				
SCLERACTINIA	FAVIIDAE	*Favia speciosa*			x	x						x	x
SCLERACTINIA	FAVIIDAE	*Favia stelligera*		x		x			x			x	x
SCLERACTINIA	FAVIIDAE	*Favites abdita*				x			x			x	
SCLERACTINIA	FAVIIDAE	*Favites ?complanata*		x	x	x			x		x	x	x
SCLERACTINIA	FAVIIDAE	*Favites ?halicora*			x				x		x		x
SCLERACTINIA	FAVIIDAE	*Favites flexuosa*				x							
SCLERACTINIA	FAVIIDAE	*Favites ?pentagona*				x							
SCLERACTINIA	FAVIIDAE	*Favites* aff. *russelli*											x
SCLERACTINIA	FAVIIDAE	*Goniastrea ?aspera*		x					x			x	
SCLERACTINIA	FAVIIDAE	*Goniastrea edwardsi*										x	
SCLERACTINIA	FAVIIDAE	*Goniastrea pectinata*			x					x		x	
SCLERACTINIA	FAVIIDAE	*Goniastrea pectinata*		x	x				x	x		x	x
SCLERACTINIA	FAVIIDAE	*Goniastrea retiformis*				x			x			x	x
SCLERACTINIA	FAVIIDAE	*Leptastrea ?bewickensis*		x		x						x	x
SCLERACTINIA	FAVIIDAE	*Leptastrea ?pruinosa*							x	x	x		
SCLERACTINIA	FAVIIDAE	*Leptastrea purpurea*		x	x	x	x	x	x	x	x	x	x
SCLERACTINIA	FAVIIDAE	*Leptastrea transversa*			x	x							x
SCLERACTINIA	FAVIIDAE	*Leptoria phrygia*		x	x	x			x			x	x

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SCLERACTINIA	FAVIIDAE	*Montastrea curta*		x	x	x			x		x	x	
SCLERACTINIA	FAVIIDAE	*Montastrea* sp. 1		x	x				x	x	x	x	x
SCLERACTINIA	FAVIIDAE	*Montastrea* sp. 2		x								x	
SCLERACTINIA	FAVIIDAE	*Oulophyllia crispa*			x							x	
SCLERACTINIA	FAVIIDAE	*Platygyra ?lamellina*										x	
SCLERACTINIA	FAVIIDAE	*Platygyra daedalea*		x	x				x			x	x
SCLERACTINIA	FAVIIDAE	*Platygyra pini*		x	x	x			x			x	x
SCLERACTINIA	FAVIIDAE	*Plesiastrea versipora*			x								
SCLERACTINIA	FUNGIIDAE	*Fungia ?danai*											
SCLERACTINIA	FUNGIIDAE	*Fungia echinata*										x	x
SCLERACTINIA	FUNGIIDAE	*Fungia fungites*		x	x	x			x	x		x	x
SCLERACTINIA	FUNGIIDAE	*Fungia paumotensis*		x	x								
SCLERACTINIA	FUNGIIDAE	*Fungia ?repanda*											x
SCLERACTINIA	FUNGIIDAE	*Fungia scutaria*		x	x	x						x	
SCLERACTINIA	FUNGIIDAE	*Halomitra pileus*		x	x						x		x
SCLERACTINIA	FUNGIIDAE	*Herpolitha limax*		x	x				x		x	x	
SCLERACTINIA	FUNGIIDAE	*Sandolitha robusta*								x	x	x	x
SCLERACTINIA	MERULINIDAE	*Hydnophora exesa*		x					x	x	x	x	x
SCLERACTINIA	MERULINIDAE	*Hydnophora microconos*		x	x	x			x			x	
SCLERACTINIA	MERULINIDAE	*Merulina ampliata*		x	x	x			x		x	x	x
SCLERACTINIA	MERULINIDAE	*Merulina scabricula*		x						x		x	
SCLERACTINIA	MERULINIDAE	*Scapophyllia cylindrica*		x									
SCLERACTINIA	MUSSIDAE	*Acanthastrea echinata*										x	
SCLERACTINIA	MUSSIDAE	*Lobophyllia corymbosa*		x		x						x	
SCLERACTINIA	MUSSIDAE	*Lobophyllia hemprichii*		x	x	x			x	x	x	x	x
SCLERACTINIA	MUSSIDAE	*Scolymia* sp.											x
SCLERACTINIA	MUSSIDAE	*Symphyllia ?recta*		x									x
SCLERACTINIA	OCULINIDAE	*Galaxea fascicularis*		x	x	x			x	x	x	x	x
SCLERACTINIA	PECTINIIDAE	*Echinophyllia aspera*			x	x			?		x		?
SCLERACTINIA	PECTINIIDAE	*Echinophyllia echinata*									x	x	
SCLERACTINIA	PECTINIIDAE	*Mycedium elephantotus*			x	x			x	x	x	x	x
SCLERACTINIA	PECTINIIDAE	*Oxypora ?lacera*				x			x		x		x
SCLERACTINIA	POCILLOPORIDAE	*Pocillopora damicornis*				x	x	x	x	x	x	x	x
SCLERACTINIA	POCILLOPORIDAE	*Pocillopora danae*		x	x	x			x		x	x	x
SCLERACTINIA	POCILLOPORIDAE	*Pocillopora elegans*		x	x						x	x	
SCLERACTINIA	POCILLOPORIDAE	*Pocillopora eydouxi*		x	x	x			x	x	x	x	x
SCLERACTINIA	POCILLOPORIDAE	*Pocillopora* cf. *ligulata*				x							
SCLERACTINIA	POCILLOPORIDAE	*Pocillopora meandrina*		x	x	x			x	x	x	x	x
SCLERACTINIA	POCILLOPORIDAE	*Pocillopora setchelli*							x			x	

Taxa	Family	Species	Status	Station									
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SCLERACTINIA	POCILLOPORIDAE	*Pocillopora verrucosa*		x	x	x			x	x		x	x
SCLERACTINIA	POCILLOPORIDAE	*Stylophora mordax*		x								x	
SCLERACTINIA	PORITIDAE	*Alveopora superficialis*			x	x			x			x	x
SCLERACTINIA	PORITIDAE	*Goniopora* cf. *lobata*				x			x	x		x	
SCLERACTINIA	PORITIDAE	*Goniopora columna*											
SCLERACTINIA	PORITIDAE	*Goniopora minor*		x	x								x
SCLERACTINIA	PORITIDAE	*Goniopora somaliensis*		x									x
SCLERACTINIA	PORITIDAE	*Porites annae*		x	x	x			x			x	x
SCLERACTINIA	PORITIDAE	*Porites australiensis*											x
SCLERACTINIA	PORITIDAE	*Porites convexa*								x			x
SCLERACTINIA	PORITIDAE	*Porites cylindrica*				x			x		x		x
SCLERACTINIA	PORITIDAE	*Porites horizontalata*									x		x
SCLERACTINIA	PORITIDAE	*Porites lichen*		x	x				x	x	x	x	x
SCLERACTINIA	PORITIDAE	*Porites lobata*		x	x	x		x	x	x	x	x	x
SCLERACTINIA	PORITIDAE	*Porites lutea*		x		x	x		x	x	x	x	x
SCLERACTINIA	PORITIDAE	*Porites ?murrayensis*							x				
SCLERACTINIA	PORITIDAE	*Porites rus*		x	x	x			x	x	x	x	x
SCLERACTINIA	PORITIDAE	*Porites solida*											x
SCLERACTINIA	PORITIDAE	*Porites* sp.										x	
SCLERACTINIA	PORITIDAE	*Porites superfusa*		x	x	x			x	x	x	x	x
SCLERACTINIA	PORITIDAE	*Porites vaughani*		x	x	x			x	x		x	x
SCLERACTINIA	PORITIDAE	*Stylarea punctata*		x	x				x			x	x
SCLERACTINIA	SIDERASTREIDAE	*Coscinerea columna*		x	x	x				x	x	x	x
SCLERACTINIA	SIDERASTREIDAE	*Psammocora* cf. *obtusangula*				x			x				
SCLERACTINIA	SIDERASTREIDAE	*Psammocora contigua*				x	x		x				
SCLERACTINIA	SIDERASTREIDAE	*Psammocora digitata*		x					x	x			x
SCLERACTINIA	SIDERASTREIDAE	*Psammocora explanulata*								x	x		
SCLERACTINIA	SIDERASTREIDAE	*Psammocora haimeana*		x	x	x	x		x	x		x	x
SCLERACTINIA	SIDERASTREIDAE	*Psammocora nierstraszi*		x	x				x			x	x
SCLERACTINIA	SIDERASTREIDAE	*Psammocora profundicella*				x						x	
SCLERACTINIA	SIDERASTREIDAE	*Psammocora* sp. 1 aff. *nierstraszi*		x					x	x	x	x	
ZOANTHIDEA	ZOANTHIDAE	*Palythoa* sp.				x			x	x	x		x
ZOANTHIDEA	ZOANTHIDAE	*Protopalythoa* sp.								x	x		
ZOANTHIDEA	ZOANTHIDAE	unid. Zoanthidae		x	x				x	x	x	x	x
ZOANTHIDEA	ZOANTHIDAE	*Zoanthus* sp.		x									
ZOANTHIDEA	ZOANTHIDAE	*Zooanthus vietnamensis*				x			x				
CORALLIMORPHARIA	ACTINODISCIDAE	*Discosoma howesii*			x	x							
ANTHOZOA	UNID. ANTHOZOA	unid. Anthozoa						x					
PLATYHELMINTHES	UNID. PLATYHELMINTHES	unid. Platyhelminthes					x		x				

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
NEMERTEA	UNID. NEMERTEA	unid. Nemertea					x						
NEMATODA	UNID. NEMATODA	unid. Nematoda			x			x	x	x			
POLYCHAETA	POLYNOIDAE	*Lepidonotus* sp.					x	x					
POLYCHAETA	POLYNOIDAE	unid. Harmothoinae sp.							x			x	x
POLYCHAETA	POLYNOIDAE	unid. Lepidonotinae sp.							x			x	
POLYCHAETA	POLYNOIDAE	unid. Polynoidae											x
POLYCHAETA	CHRYSOPETALIDAE	*Chrysopetalum* sp.		x									
POLYCHAETA	CHRYSOPETALIDAE	*Palaeonotus* sp.						x	x			x	
POLYCHAETA	AMPHINOMIDAE	*?Eurythoe* sp.										x	
POLYCHAETA	AMPHINOMIDAE	*?Pseudoeurythoe* sp.								x			
POLYCHAETA	AMPHINOMIDAE	*Eurythoe* sp.				x	x						
POLYCHAETA	AMPHINOMIDAE	*Hermodice* sp.				x							
POLYCHAETA	AMPHINOMIDAE	*Pherecardia* sp.										x	
POLYCHAETA	AMPHINOMIDAE	*Pseudoeurythoe* spp.				x						x	
POLYCHAETA	PHYLLODOCIDAE	*?Paranaitis* sp.									x		
POLYCHAETA	PHYLLODOCIDAE	*Phyllodoce* sp.							x	x		x	
POLYCHAETA	SYLLIDAE	*Pionosyllis* sp. 1		x									
POLYCHAETA	SYLLIDAE	*Syllidae* sp. 1		x									
POLYCHAETA	SYLLIDAE	*Syllidae* sp. 2		x									
POLYCHAETA	SYLLIDAE	*Syllis* sp. 1		x									
POLYCHAETA	SYLLIDAE	unid. Syllidae		x	x	x	x						x
POLYCHAETA	NEREIDIDAE	*Ceratonereis* sp. 1		x									
POLYCHAETA	NEREIDIDAE	*Ceratonereis* sp. 2		x								x	
POLYCHAETA	NEREIDIDAE	*Ceratonereis* spp.			x			x	x	x			x
POLYCHAETA	NEREIDIDAE	*Neanthes* sp.		x							x	x	
POLYCHAETA	NEREIDIDAE	*Nereis* sp.					x	x		x			
POLYCHAETA	NEREIDIDAE	*Platynereis* sp.			x								
POLYCHAETA	NEREIDIDAE	*Pseudonereis* sp.			x			x				x	
POLYCHAETA	NEREIDIDAE	*Pseudonereis* sp. 1		x									
POLYCHAETA	NEREIDIDAE	unid. Nereididae			x							x	x
POLYCHAETA	GLYCERIDAE	*Glycera* sp.		x					x			x	
POLYCHAETA	EUNICIDAE	*Eunice* sp.			x	x	x	x	x	x	x	x	x
POLYCHAETA	EUNICIDAE	*Lydidice* sp.1		x									
POLYCHAETA	EUNICIDAE	*Lysidice* sp .2		x									
POLYCHAETA	EUNICIDAE	*Lysidice* spp.			x	x	x	x	x	x	x	x	x
POLYCHAETA	EUNICIDAE	*Nematonereis* sp.			x			x	x	x	x		x
POLYCHAETA	EUNICIDAE	*Nematoneris* sp.					x						
POLYCHAETA	EUNICIDAE	*Oeninida* sp.			x								
POLYCHAETA	EUNICIDAE	*Oenone* sp.				x	x	x	x				

Taxa	Family	Species	Status	Station									
				1	2	3	4	5	6	7	8	9	10
POLYCHAETA	LUMBRINERIDAE	*Lumbrineris* sp.			x							x	
POLYCHAETA	DORVILLEIDAE	*Dorvillea* sp.					x		x			x	x
POLYCHAETA	SPIONIDAE	*Dipolydora* sp.									x		
POLYCHAETA	SPIONIDAE	*Polydora* sp.					x	x	x			x	
POLYCHAETA	SPIONIDAE	*Prionospio* sp.										x	
POLYCHAETA	SPIONIDAE	unid. Spionidae							x				
POLYCHAETA	CIRRATULIDAE	*Caulleriella* sp.						x	x				
POLYCHAETA	CIRRATULIDAE	*Cirratulus* sp.						x					
POLYCHAETA	CIRRATULIDAE	*Cirriformia punctata*									x		
POLYCHAETA	CIRRATULIDAE	*Cirriformia* sp.					x						
POLYCHAETA	CHAETOPTERIDAE	*Chaetopterus* sp.		x			x						
POLYCHAETA	CHAETOPTERIDAE	*Phyllochaetopterus* sp.					x	x	x	x			
POLYCHAETA	CHAETOPTERIDAE	*Spiochaetopterus* sp.									x		
POLYCHAETA	ORBINIIDAE	*Naineris* sp.											x
POLYCHAETA	OPHELIIDAE	*Armandia* sp.										x	
POLYCHAETA	OPHELIIDAE	*Polyophthalmus* sp.		x					x			x	
POLYCHAETA	CAPITELLIDAE	*Bhawania* sp.					x					x	
POLYCHAETA	CAPITELLIDAE	*Notomastus* sp.								x	x		
POLYCHAETA	TEREBELLIDAE	*?Nicolea* sp.				x							
POLYCHAETA	TEREBELLIDAE	*Eupolymnia* sp.								x			
POLYCHAETA	TEREBELLIDAE	*Loimia* cf. *ingens*											x
POLYCHAETA	TEREBELLIDAE	*Pista* sp.							x				
POLYCHAETA	TEREBELLIDAE	*Streblosoma* sp.					x						
POLYCHAETA	TEREBELLIDAE	unid. Terebellidae						x					
POLYCHAETA	SABELLIDAE	*Branchiomma* sp.					x		x	x			
POLYCHAETA	SABELLIDAE	*Hypsicomus* sp.							x				
POLYCHAETA	SABELLIDAE	*Megalomma* sp.							x		x		
POLYCHAETA	SABELLIDAE	*Potamilla* sp.								x			
POLYCHAETA	SABELLIDAE	*Sabella* sp.					x						
POLYCHAETA	SERPULIDAE	*Ficopomatus* sp.									x		
POLYCHAETA	SERPULIDAE	*Salmacina dysteri*	Introduced		x	x	x						
POLYCHAETA	SERPULIDAE	*Spirobranchus giganteus*		x	x	x			x			x	
POLYCHAETA	SERPULIDAE	*Spirobranchus* sp.				x			x	x			
POLYCHAETA	SERPULIDAE	*Temporaria* sp.							x	x			
POLYCHAETA	SERPULIDAE	unid. Serpulidae			x	x	x				x		
POLYCHAETA	EUPHROSINIDAE	*Euphrosine* sp.							x			x	
POLYCHAETA	POECILOCHAETIDAE	*Poecilochaetus* sp.										x	
OLIGOCHAETA	UNID. OLIGOCHAETA	unid. Oligochaeta			x					x	x	x	x
GASTROPODA	HALIOTIDAE	*Haliotis* sp.		x						x			

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GASTROPODA	FISSURELLIDAE (DIODORINAE)	*Diodora* sp.				x	x		x	x	x		
GASTROPODA	FISSURELLIDAE (EMARGINULINAE)	*Emarginula montrouzieri*							x		x		x
GASTROPODA	PATELLIDAE	*Cellana pricei*							x				
GASTROPODA	PATELLIDAE	*Scutellaster flexuosa*				x			x				
GASTROPODA	PATELLIDAE	unid. Patellidae		x	x		x		x	x	x	x	x
GASTROPODA	STOMATELLIDAE	*?Stomatia* sp.		x					x				
GASTROPODA	STOMATELLIDAE	*Synaptocochlea* sp. 1			x				x		x		
GASTROPODA	STOMATELLIDAE	*Synaptocochlea* sp. 2							x				
GASTROPODA	STOMATELLIDAE	*Synaptocochlea* sp. 3							x				x
GASTROPODA	STOMATELLIDAE	unid. Stomatellidae		x	x		x						
GASTROPODA	TROCHIDAE (ENCYCLINAE)	*Euchelus atratus*				x				x			
GASTROPODA	TROCHIDAE (ENCYCLINAE)	*Gibbula marmorea*										x	
GASTROPODA	TROCHIDAE (TROCHINAE)	*Clanculus denticulatus*				x			x				
GASTROPODA	TROCHIDAE (TROCHINAE)	*Clanculus* sp.		x									
GASTROPODA	TROCHIDAE (TROCHINAE)	*Monilea* sp.							x				
GASTROPODA	TROCHIDAE (TROCHINAE)	*Tectus pyramis*			x	x			x	x		x	
GASTROPODA	TROCHIDAE (TROCHINAE)	*Trochus histrio*		x	x								x
GASTROPODA	TROCHIDAE (TROCHINAE)	*Trochus incrassatus*		x									
GASTROPODA	TROCHIDAE (TROCHINAE)	*Trochus niloticus*	Introduced						x				
GASTROPODA	TROCHIDAE (TROCHINAE)	*Trochus pyramis*							x				
GASTROPODA	TROCHIDAE (TROCHINAE)	*Trochus* sp. 1										x	
GASTROPODA	TROCHIDAE (TROCHINAE)	*Trochus* sp. 2		x	x				x	x			
GASTROPODA	TROCHIDAE (TROCHINAE)	*Trochus stellatus*			x	x			x	x	x	x	
GASTROPODA	TROCHIDAE (TROCHINAE)	unid. Trochidae		x	x				x				
GASTROPODA	TURBINIDAE (COLLONINAE)	*Astralium rhodostoma*		x	x	x			x	x	x	x	x
GASTROPODA	TURBINIDAE (COLLONINAE)	*Astralium rhodostoma*				x			x	x	x	x	
GASTROPODA	TURBINIDAE (COLLONINAE)	*Leptothyra verruca*			x					x	x		x
GASTROPODA	TURBINIDAE (TURBININAE)	*Turbo argyrostomus*											
GASTROPODA	TURBINIDAE (TURBININAE)	*Turbo crassa*											x
GASTROPODA	TURBINIDAE (TURBININAE)	*Turbo petholatus*				x							
GASTROPODA	TURBINIDAE (TURBININAE)	*Turbo setosus*				x			x				x
GASTROPODA	NERITIDAE (NERITINAE)	*?Nerita* sp.				x							
GASTROPODA	NERITIDAE (NERITINAE)	*Nerita albicilla*							x				
GASTROPODA	NERITIDAE (NERITINAE)	*Nerita* cf. *picea*								x			
GASTROPODA	NERITIDAE (NERITINAE)	*Nerita incerta*				x							
GASTROPODA	NERITIDAE (NERITINAE)	*Nerita plicata*				x				x			
GASTROPODA	NERITIDAE (NERITINAE)	*Nerita polita*				x	x			x		x	
GASTROPODA	CERITHIIDAE	*?Cerithium zebrum*										x	

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GASTROPODA	CERITHIIDAE	*Rhinoclavis aspera*				x							
GASTROPODA	CERITHIIDAE	*Rhinoclavis sinensis*										x	x
GASTROPODA	PLANAXIDAE	*Hinea fasciata*							x				
GASTROPODA	TURRITELLIDAE	unid. Turritellidae				x							
GASTROPODA	LITTORINIDAE (LITTORININAE)	*Littoraria coccinea*			x				x	x			
GASTROPODA	LITTORINIDAE (LITTORININAE)	*Littoraria scabra*					x						
GASTROPODA	LITTORINIDAE (LITTORININAE)	*Littoraria* sp.							x	x			
GASTROPODA	LITTORINIDAE (LITTORININAE)	*Littoraria undulata*							x				
GASTROPODA	LITTORINIDAE (LITTORININAE)	*Nodilittorina* sp.					x						
GASTROPODA	CAECIDAE	unid. Caecidae		x	x				x				
GASTROPODA	RISSOIDAE (RISSOININAE)	*?Rissoina* sp.					x		x	x	x		
GASTROPODA	RISSOIDAE (RISSOININAE)	*Rissoina (Apataxia) cerithiiformis*		x	x		x		x		x		
GASTROPODA	STROMBIDAE	*Lambis scorpius*				x			x			x	x
GASTROPODA	STROMBIDAE	*Strombus* cf. *luhuanus*				x							
GASTROPODA	STROMBIDAE	*Strombus gibberulus*				x	x						
GASTROPODA	STROMBIDAE	*Strombus lentiginosus*				x							
GASTROPODA	STROMBIDAE	*Strombus luhuanus*				x	x			x		x	
GASTROPODA	HIPPONICIDAE	*Hipponix* sp.		x	x				x			x	
GASTROPODA	VERMETIDAE	unid. Vermetidae											
GASTROPODA	CYPRAEIDAE	*Cypraea annulus*		x		x			x	x			
GASTROPODA	CYPRAEIDAE	*Cypraea arabica*			x	x			x				
GASTROPODA	CYPRAEIDAE	*Cypraea asellus*					x						
GASTROPODA	CYPRAEIDAE	*Cypraea caputserpensis*		x		x			x			x	
GASTROPODA	CYPRAEIDAE	*Cypraea carneola*					x	x	x				
GASTROPODA	CYPRAEIDAE	*Cypraea childreni*		x									
GASTROPODA	CYPRAEIDAE	*Cypraea childreni*		x									
GASTROPODA	CYPRAEIDAE	*Cypraea cribraria*				x							
GASTROPODA	CYPRAEIDAE	*Cypraea depressa*							x				
GASTROPODA	CYPRAEIDAE	*Cypraea eglantina*				x	x						
GASTROPODA	CYPRAEIDAE	*Cypraea erosa*					x	x	x				
GASTROPODA	CYPRAEIDAE	*Cypraea isabella*		x	x	x			x				
GASTROPODA	CYPRAEIDAE	*Cypraea labrolineata*											
GASTROPODA	CYPRAEIDAE	*Cypraea lynx*		x	x				x				
GASTROPODA	CYPRAEIDAE	*Cypraea moneta*		x		x			x				
GASTROPODA	CYPRAEIDAE	*Cypraea poraria*			x								
GASTROPODA	CYPRAEIDAE	*Cypraea* sp. (juvenile)			x				x				x
GASTROPODA	LAMELLARIIDAE	*Coriocella nigra*		x						x			
GASTROPODA	BURSIDAE	*Bursa cruentata*		x									
GASTROPODA	BURSIDAE	*Bursa rhodostoma*			x								

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
GASTROPODA	RANELLIDAE (CYMATIINAE)	*Cymatium (Septa) ?gemmatum*						x					
GASTROPODA	RANELLIDAE (CYMATIINAE)	*Cymatium (Septa) aquatile*					x						
GASTROPODA	RANELLIDAE (CYMATIINAE)	*Cymatium (Septa) pileare*					x						
GASTROPODA	RANELLIDAE (CYMATIINAE)	*Cymatium* sp.					x						
GASTROPODA	RANELLIDAE (RANELLINAE)	*Gyrineum gyrinum*				x	x			x			
GASTROPODA	TRIPHORIDAE (INIFORINAE)	*Iniforis* sp.								x			
GASTROPODA	TRIPHORIDAE (MASTONIINAE)	*Mastonia ?cingulifera*		x					x				
GASTROPODA	TRIPHORIDAE (MASTONIINAE)	*Mastonia rubra*		x					x	x	x		
GASTROPODA	TRIPHORIDAE (MASTONIINAE)	*Mastonia* sp.				x					x		
GASTROPODA	TRIPHORIDAE (MASTONIINAE)	unid. Triphoridae			x					x		x	
GASTROPODA	TRIPHORIDAE (METAXIINAE)	*Metaxia* sp.				x				x	x		x
GASTROPODA	EULIMIDAE	*Stilifer linckiae*								x			
GASTROPODA	BUCCINIDAE	*?Cantharus* sp.				x				x	x		
GASTROPODA	BUCCINIDAE	*Cantharus undosus*							x	x			
GASTROPODA	BUCCINIDAE	*Engina alveolata*							x				
GASTROPODA	BUCCINIDAE	*Engina mendicaria*				x			x				
GASTROPODA	BUCCINIDAE	*Engina zonalis*							x				
GASTROPODA	BUCCINIDAE	*Prodotia iostomus*		x	x								
GASTROPODA	BUCCINIDAE	unid. Buccinidae			x					x			
GASTROPODA	COLUBRARIIDAE	*Colubraria* sp.					x					x	
GASTROPODA	COLUMBELLIDAE	*?Anachis misera*								x			
GASTROPODA	COLUMBELLIDAE	Columbellidae sp. 1					x	x	x	x	x		
GASTROPODA	COLUMBELLIDAE	Columbellidae sp. 2							x				
GASTROPODA	COLUMBELLIDAE	Columbellidae sp. 3							x				
GASTROPODA	COLUMBELLIDAE	Columbellidae sp. 4		x	x		x						
GASTROPODA	COLUMBELLIDAE	*Euplica* sp.			x								
GASTROPODA	COLUMBELLIDAE	*Metanachis marquesa*			x								
GASTROPODA	COLUMBELLIDAE	*Mitrella* sp. 1			x								
GASTROPODA	COLUMBELLIDAE	*Mitrella* sp. 2								x			
GASTROPODA	COLUMBELLIDAE	*Pyrene testudinaria*			x								
GASTROPODA	COLUMBELLIDAE	unid. Columbellidae		x						x			x
GASTROPODA	COLUMBELLIDAE	*Zafra* sp.					x	x					
GASTROPODA	CORALLIOPHILIDAE	*Coralliophila* sp.		x									
GASTROPODA	CORALLIOPHILIDAE	*Coralliophila madreporaria*			x								
GASTROPODA	CORALLIOPHILIDAE	*Coralliophila neritoidea*							x				
GASTROPODA	CORALLIOPHILIDAE	*Coralliophila violacea*											x
GASTROPODA	CORALLIOPHILIDAE	cf. *Leptoconchus lamarckii*										x	
GASTROPODA	CORALLIOPHILIDAE	*Quoyula madreporarum*		x									x
GASTROPODA	FASCIOLARIIDAE	*?Peristernia* cf. *constricta*		x	x				x				

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GASTROPODA	FASCIOLARIIDAE	*Latirolagena smaragdula*			x	x			x		x		
GASTROPODA	FASCIOLARIIDAE	*Latirus polygonus*			x								
GASTROPODA	FASCIOLARIIDAE	*Latirus smaragdula*				x			x	x		x	
GASTROPODA	FASCIOLARIIDAE	*Peristernia fastigium*							x			x	
GASTROPODA	FASCIOLARIIDAE	*Peristernia incarnata*				x			x	x	x		
GASTROPODA	FASCIOLARIIDAE	*Peristernia nassatula*			x	x				x	x		
GASTROPODA	FASCIOLARIIDAE	*Peristernia* sp. 1			x								
GASTROPODA	FASCIOLARIIDAE	*Peristernia* sp. 2				x							
GASTROPODA	FASCIOLARIIDAE	*Peristernia* sp. 3			x								
GASTROPODA	FASCIOLARIIDAE	*Pleuroploca filamentosa*			x								
GASTROPODA	FASCIOLARIIDAE	*Pleuroploca sp.*			x								
GASTROPODA	FASCIOLARIIDAE	unid. Fasciolaridae			x								x
GASTROPODA	MURICIDAE	*Chicoreus brunneus*				x			x				x
GASTROPODA	MURICIDAE	*Chicoreus* sp.				x							
GASTROPODA	MURICIDAE	*Cronia margariticola*						x					
GASTROPODA	MURICIDAE	*Cronia* sp.								x			
GASTROPODA	NASSARIIDAE	*Nassarius quadrasi*				x							
GASTROPODA	NASSARIIDAE	*Niotha albescens*							x				
GASTROPODA	THAIDIDAE	*?Morula* sp.		x	x					x	x		x
GASTROPODA	THAIDIDAE	*?Thais* sp.							x				
GASTROPODA	THAIDIDAE	*Drupa ?rubusidaeus* (juvenile)				x							
GASTROPODA	THAIDIDAE	*Drupa grossularia*			x	x			x			x	x
GASTROPODA	THAIDIDAE	*Drupa morum*			x				x			x	
GASTROPODA	THAIDIDAE	*Drupa ricina*			x	x			x	x	x	x	x
GASTROPODA	THAIDIDAE	*Drupa rubrosidaeus*										x	
GASTROPODA	THAIDIDAE	*Drupella cornus*			x	x			x	x	x	x	x
GASTROPODA	THAIDIDAE	*Drupella* sp.			x	x			x	x	x		x
GASTROPODA	THAIDIDAE	*Habromorula lepida*								x			
GASTROPODA	THAIDIDAE	*Habromorula* sp.				x	x						
GASTROPODA	THAIDIDAE	*Mancinella hippocastanus*		x									
GASTROPODA	THAIDIDAE	*Mancinella tuberosa*				x			x				
GASTROPODA	THAIDIDAE	*Morula granulata*			x	x			x				
GASTROPODA	THAIDIDAE	*Morula* sp.				x				x		x	
GASTROPODA	THAIDIDAE	*Morula spinosa*					x			x			
GASTROPODA	THAIDIDAE	*Morula uva*		x	x	x			x			x	x
GASTROPODA	THAIDIDAE	*Nassa francolina*				x							
GASTROPODA	THAIDIDAE	*Thais armigera*				x							
GASTROPODA	COSTELLARIIDAE	*Costellaria* sp. 1				x							
GASTROPODA	COSTELLARIIDAE	*Costellaria* sp. 2				x							

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
GASTROPODA	COSTELLARIIDAE	*Costellaria cadaverosa*				x							
GASTROPODA	COSTELLARIIDAE	*Costellaria exasperata*				x							
GASTROPODA	COSTELLARIIDAE	*Costellaria semifasciata*											x
GASTROPODA	COSTELLARIIDAE	*unid. Costellariidae*				x					x		
GASTROPODA	COSTELLARIIDAE	*Vexillum (Costellaria) ?diutenerum*		x					x				
GASTROPODA	COSTELLARIIDAE	*Vexillum (Pusia) cancellarioides*			x								
GASTROPODA	COSTELLARIIDAE	*Vexillum exasperatum*				x							
GASTROPODA	HARPIDAE	*Harpidae* (juvenile)		x									
GASTROPODA	MITRIDAE (IMBRICARIINAE)	*Imbricaria olivaeformis*				x							
GASTROPODA	MITRIDAE (IMBRICARIINAE)	*Subcancilla flammea*				x							
GASTROPODA	MITRIDAE	*?Nebularia doliolum*			x								
GASTROPODA	MITRIDAE	*Cancilla peasei*				x							
GASTROPODA	MITRIDAE	*Cancilla* sp.						x					
GASTROPODA	MITRIDAE (MITRINAE)	*Domiporta filaris*				x							
GASTROPODA	MITRIDAE (MITRINAE)	*Mitra (Nebularia) tabanula*							x				
GASTROPODA	MITRIDAE (MITRINAE)	*Mitra (Strigatella) assimilis*				x							
GASTROPODA	MITRIDAE (MITRINAE)	*Nebularia chrysalis*											x
GASTROPODA	MITRIDAE (MITRINAE)	*Nebularia chrysostoma*							x				
GASTROPODA	MITRIDAE (MITRINAE)	*Strigatella decurtata*							x				
GASTROPODA	MITRIDAE (MITRINAE)	*Swainsonia casta*						x					
GASTROPODA	MITRIDAE	unid. Mitridae		x					x				
GASTROPODA	MITRIDAE (MITRINAE)	*Zierliana woldemarii*							x				
GASTROPODA	TURBINELLIDAE	*Vasum ?turbinellum*			x								
GASTROPODA	TURBINELLIDAE	*Vasum ceramicum*			x	x			x			x	
GASTROPODA	TURBINELLIDAE	*Vasum turbinellum*			x	x			x	x	x	x	x
GASTROPODA	CONIDAE	*Conus ?circumactus*							x				
GASTROPODA	CONIDAE	*Conus ?imperialis*			x								
GASTROPODA	CONIDAE	*Conus ?moreleti/balteatus*							x				
GASTROPODA	CONIDAE	*Conus ?sponsalis* (juvenile)									x	x	
GASTROPODA	CONIDAE	*Conus chaldeus*				x			x				
GASTROPODA	CONIDAE	*Conus distans*							x			x	
GASTROPODA	CONIDAE	*Conus ebraeus*			x	x			x				
GASTROPODA	CONIDAE	*Conus eburneus*				x							
GASTROPODA	CONIDAE	*Conus flavidus*			x	x			x	x			
GASTROPODA	CONIDAE	*Conus frigidus*		x					x	x			
GASTROPODA	CONIDAE	*Conus geographus*			d				x				
GASTROPODA	CONIDAE	*Conus glans*							x				
GASTROPODA	CONIDAE	*Conus lividus*				x			x	x		x	x
GASTROPODA	CONIDAE	*Conus miles*		x	x				x				x

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
GASTROPODA	CONIDAE	*Conus miliaris*			x	x			x				
GASTROPODA	CONIDAE	*Conus nanus*			x				x	x			
GASTROPODA	CONIDAE	*Conus planorbis*		x		x			x	x			
GASTROPODA	CONIDAE	*Conus pulicarius*				x			x	x			
GASTROPODA	CONIDAE	*Conus rattus*			x	x			x	x			
GASTROPODA	CONIDAE	*Conus sanguinolentus*			x	x			x				
GASTROPODA	CONIDAE	*Conus* sp.											x
GASTROPODA	CONIDAE	*Conus sponsalis*			x	x			x	x		x	
GASTROPODA	CONIDAE	*Conus striatus*		x									
GASTROPODA	CONIDAE	*Conus vexillum*				x							x
GASTROPODA	TEREBRIDAE	*Terebra ?jenningsi*					x						
GASTROPODA	TEREBRIDAE	*Terebra aereolata*				x							
GASTROPODA	TEREBRIDAE	*Terebra affinis*				x							
GASTROPODA	TEREBRIDAE	*Terebra babylonia*				x							
GASTROPODA	TEREBRIDAE	*Terebra columellaris*				x							
GASTROPODA	TEREBRIDAE	*Terebra crenulata*				x							
GASTROPODA	TEREBRIDAE	*Terebra dimidiata*				x							
GASTROPODA	TEREBRIDAE	*Terebra guttata*		x		x							
GASTROPODA	TEREBRIDAE	*Terebra maculata*				x						x	
GASTROPODA	TEREBRIDAE	*Terebra subulata*				x							
GASTROPODA	TEREBRIDAE	unid. Terebridae										x	
GASTROPODA	TURRIDAE (DRILLIINAE)	*?Inquisitor* sp.							x				
GASTROPODA	TURRIDAE (TURRINAE)	unid. Turridae		x	x								
GASTROPODA	ARCHITECTONICIDAE	unid. Architectonicidae					x					x	
GASTROPODA	ACTEONIDAE	*Acteon* sp.				x							
GASTROPODA	ATYDIDAE	*Atys ?cylindrica* (juvenile)				x							
GASTROPODA	ATYDIDAE	*Atys* sp.		x									
GASTROPODA	CHROMODORIDIDAE	*Risbeca tyroni*				x	x	x	x				
GASTROPODA	PHYLLIDIIDAE	*Phyllidia* sp.		x		x			x	x	x	x	x
GASTROPODA	PHYLLIDIIDAE	*Phyllidiella pustulosa*			x	x			x	x		x	
GASTROPODA	DORIDIDAE (KENTRODORIDINAE)	*Jorunna funebris*				x							x
GASTROPODA	MELAMPIDAE	*Laemodonta octanfracta*					x						
GASTROPODA	SIPHONARIIDAE	*Siphonaria (Heterosiphonaria)* sp.				x	x		x	x			
GASTROPODA	UNID. GASTROPODA	unid. Micromollusc sp. 1		x	x				x	x		x	x
GASTROPODA	UNID. GASTROPODA	unid. Micromollusc sp. 2										x	
GASTROPODA	UNID. GASTROPODA	unid. Micromollusc sp. 3										x	
GASTROPODA	UNID. GASTROPODA	unid. Micromollusc sp. 4										x	
GASTROPODA	UNID. GASTROPODA	unid. Micromollusc sp. 5				x			x				

Taxa	Family	Species	Status	Station									
				1	2	3	4	5	6	7	8	9	10
BIVALVIA	MYTILIDAE	*Brachidontes* spp.					x		x	x	x		x
BIVALVIA	MYTILIDAE	*Lithophaga nigra*				x			x				
BIVALVIA	MYTILIDAE	*Lithophaga* sp.											x
BIVALVIA	MYTILIDAE	*Musculus* sp.						x					
BIVALVIA	MYTILIDAE	*Rhomboidella malaccana*							x				
BIVALVIA	MYTILIDAE	*Septifer cumingi* complex							x	x	x		
BIVALVIA	ARCIDAE (ANADARINAE)	*Anadara* sp. (juvenile)					x						
BIVALVIA	ARCIDAE (ANADARINAE)	*Bentharca* sp. 1							x				
BIVALVIA	ARCIDAE (ARCINAE)	*Acar plicata*				x							x
BIVALVIA	ARCIDAE (ARCINAE)	*Acar plicata?* (juvenile)									x		
BIVALVIA	ARCIDAE (ARCINAE)	*Arca avellana*							x		x		
BIVALVIA	ARCIDAE (ARCINAE)	*Barbatia amygdalumtostum*				x	x	x	x				
BIVALVIA	ARCIDAE (ARCINAE)	*Barbatia parva*		x	x				x	x		x	x
BIVALVIA	ARCIDAE (ARCINAE)	*Barbatia* sp.									x		
BIVALVIA	ISOGNOMONIDAE	*Isognomon* (juvenile)							x				
BIVALVIA	ISOGNOMONIDAE	*Isognomon nucleus*							x				
BIVALVIA	ISOGNOMONIDAE	*Isognomon perna*				x				x			
BIVALVIA	ISOGNOMONIDAE	*Isognomon* sp.								x			
BIVALVIA	MALLEIDAE	*Malleus (Malrufundus)* cf. *regula*				x			x				
BIVALVIA	MALLEIDAE	*Malvufnudus nuttalli* complex		x	x		x			x	x	x	x
BIVALVIA	MALLEIDAE	*Vulsella* sp.								x	x		
BIVALVIA	PTERIIDAE	*Pinctada* sp.					x			x		x	x
BIVALVIA	PINNIDAE	*Streptopinna saccata*								x			
BIVALVIA	LIMIDAE	*Ctenoides annulata*									x		
BIVALVIA	LIMIDAE	*Lima vulgaris*											x
BIVALVIA	LIMIDAE	*Limaria* sp.							x				
BIVALVIA	OSTREIDAE	*Dendostrea sandvicensis*						x					
BIVALVIA	OSTREIDAE	*Ostreidae* sp.											x
BIVALVIA	OSTREIDAE	*Ostreidae* sp. (juvenile)			x				x				
BIVALVIA	OSTREIDAE	*Saccostrea* sp.					x	x					
BIVALVIA	OSTREIDAE	*Saccostrea?*sp. (juvenile)								x			
BIVALVIA	PLICATULIDAE	*Plicatula ?australis*							x				
BIVALVIA	PECTINIDAE	*Chlamys* sp.											x
BIVALVIA	PECTINIDAE	*Pasachinnites coruscans*											x
BIVALVIA	PROPEAMUSIIDAE	*Chlamydella incubata* complex							x				x
BIVALVIA	SPONDYLIDAE	*Spondylus* sp.				x			x	x	x		
BIVALVIA	ANOMIIDAE	*Anomia nobilis*	Introduced				x						
BIVALVIA	ANOMIIDAE	*Anomia* sp.								x			
BIVALVIA	CHAMIDAE	*Chama asperella*				x	x		x		x		

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
BIVALVIA	CHAMIDAE	*Chama brassica*				x				x			
BIVALVIA	CHAMIDAE	*Chama pacifica*	Introduced						x				
BIVALVIA	CHAMIDAE	*Chama* sp.						x					
BIVALVIA	GASTROCHAENIDAE	*Gastrochaena* sp.							x	x			
BIVALVIA	VENERIDAE	*?Irus* sp.							x	x			
BIVALVIA	VENERIDAE	*Irus* sp.					x	x					
BIVALVIA	VENERIDAE	*Lioconcha castrensis*				x							
BIVALVIA	TRIDACNIDAE	*Tridacna maxima*					x						
BIVALVIA	TRIDACNIDAE	*Tridacna squamosa*			x	x			x			x	x
BIVALVIA	PETRICOLIDAE	*Petricola lapicida*									x		
BIVALVIA	GALEOMMATIDAE	*Galeommatidae* sp. 1											x
BIVALVIA	GALEOMMATIDAE	*Galeommatidae* sp. 2											x
BIVALVIA	GALEOMMATIDAE	*Galeommatidae* sp. 3											x
BIVALVIA	CARDIIDAE	*Fragum fragum*				x							
BIVALVIA	CARDITIDAE	*Cardita variegata*				x			x				x
BIVALVIA	CARDITIDAE	*Cardita variegata?* (juvenile)									x		
BIVALVIA	CARDITIDAE	*Vasticardium orbita philippinense*						x					
BIVALVIA	SEMELIDAE	*Lonoa hawaiensis*					x						
BIVALVIA	TELLINIDAE	*Pinguitellina robusta*				x	x						
BIVALVIA	TELLINIDAE	*Scutarcopagia scobinata*											x
BIVALVIA	TELLINIDAE	*Tellina crucigera*						x					
POLYPLACOPHORA	CHITONIDAE	unid. Chitonidae		x	x		x		x	x			
POLYPLACOPHORA	CRYPTOPLACIDAE	*Cryptoplax larvaeformis*						x					
POLYPLACOPHORA	CRYPTOPLACIDAE	*Cryptoplax* sp.		x					x				
CIRRIPEDIA	BALANIDAE	*Balanus amphitrite*	Introduced				x	x	x				
CIRRIPEDIA	BALANIDAE	*Balanus reticulatus*	Introduced							x			
CIRRIPEDIA	BALANIDAE	*Balanus trigonus*							x	x			
CIRRIPEDIA	CHTHAMALIDAE	*Chthamalus* sp.A cf. *?malayensis*			x	x	x		x	x			
CIRRIPEDIA	CHTHAMALIDAE	*Chthamalus* sp. B, *challengeri* group							x				
CIRRIPEDIA	LEPADIDAE	*Capitulum mitella*							x				
CIRRIPEDIA	LEPADIDAE	*Lithotrya nicobarica*										x	
CIRRIPEDIA	POECILASMATIDAE	*Poecilasma crassa*								x			
CIRRIPEDIA	VERRUCIDAE	*Verruca cookei*							x				
COPEPODA	UNID. COPEPODA	unid. Copepoda		x	x		x	x	x				
OSTRACODA	UNID. OSTRACODA	*Asteropterygion* n. sp.			x								
OSTRACODA	UNID. OSTRACODA	*Paravargula trifax*					x						
PODOCOPINA	CYPRIDIDAE	*Cypridina* n. sp.					x	x	x				
STOMATOPODA	UNID. STOMATOPODA	*Stomatopod* (juvenile)											x

Taxa	Family	Species	Status	Station									
				1	2	3	4	5	6	7	8	9	10
AMPHIPODA	AMPHILOCHIDAE	*Amphilochus menehune*		x				x	x	x	x		
AMPHIPODA	AMPITHOIDAE	*Ampithoe* sp.		x	x				x		x	x	
AMPHIPODA	ANAMIXIDAE	*Paranamixis madagascarensis*							x	x			
AMPHIPODA	AORIDAE	*Bemlos ?intermedius*							x				
AMPHIPODA	AORIDAE	*Bemlos* sp.			x					x	x	x	x
AMPHIPODA	AORIDAE	*Bemlos virgus*	Cryptogenic									x	
AMPHIPODA	COLOMASTIGIDAE	*Colomastix lunalilo*		x			x	x					
AMPHIPODA	COLOMASTIGIDAE	*Colomastix* sp. 1		x			x	x	x		x	x	x
AMPHIPODA	COROPHIIDAE	*Corophium ?insidiosum*	Introduced				x						
AMPHIPODA	COROPHIIDAE	*Corophium* sp. 2						x				x	x
AMPHIPODA	COROPHIIDAE	*Ericthonius brasiliensis*	Introduced				x						
AMPHIPODA	DEXAMINIDAE	*Paradexamine* sp. 1			x								
AMPHIPODA	ISAEIDAE	*Gammaropsis atlantica*		x	x				x	x	x		
AMPHIPODA	ISAEIDAE	*Gammaropsis* sp. 1							x				
AMPHIPODA	ISAEIDAE	*Photis* sp. 1							x				
AMPHIPODA	ISCHYROCERIDAE	*Jassa* sp. 1					x	x					
AMPHIPODA	ISCHYROCERIDAE	*Leucothoe micronesiae*	Introduced						x	x			
AMPHIPODA	ISCHYROCERIDAE	*Leucothoe* sp. 1		x	x				x		x		x
AMPHIPODA	ISCHYROCERIDAE	*Leucothoe* sp. 2		x						x		x	
AMPHIPODA	ISCHYROCERIDAE	*Leucothoides pottsi*		x	x	x			x		x		x
AMPHIPODA	ISCHYROCERIDAE	*Notopoma* sp.			x								
AMPHIPODA	LEUCOTHOIDAE	*Leucothoella bannwarthi*		x					x		x		
AMPHIPODA	LILJEBORGIIDAE	*Liljeborgia ?laniloa*					x		x	x			x
AMPHIPODA	MELITIDAE	*Elasmopus pseudoaffinis*			x								
AMPHIPODA	MELITIDAE	*Elasmopus* sp. 1		x	x				x	x	x		
AMPHIPODA	MELITIDAE	*Elasmopus* sp. 2							x	x		x	x
AMPHIPODA	MELITIDAE	*Elasmopus* sp. 3									x		
AMPHIPODA	MELITIDAE	*Elasmopus* sp. 4								x	x		
AMPHIPODA	MELITIDAE	*Elasmopus* sp. 5			x								
AMPHIPODA	MELITIDAE	*Maera ?pacifica*			x								
AMPHIPODA	MELITIDAE	*Maera* sp.							x				x
AMPHIPODA	MELITIDAE	*Mallacoota insignis*		x								x	
AMPHIPODA	PHLIANTIDAE	*Pereionotus alaniphlias*			x								
AMPHIPODA	PLEUSTIDAE	*Tepidopleustes ?honomu*		x									
AMPHIPODA	PODOCERIDAE	*Podocerus* sp. 1									x		
AMPHIPODA	STENOTHOIDAE	*Stenothoe valida*	Cryptogenic				x	x		x			
AMPHIPODA	TALITROIDAE	*Hyale* sp. 1			x								
ISOPODA	GNATHIIDAE	*Gnathia* n. sp.			x		x						
ISOPODA	ANTHURIDAE	*Mesanthura* sp.		x			x	x	x	x	x		

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
ISOPODA	ANTHURIDAE	*Panathura* sp.						x					
ISOPODA	ANTHURIDAE	*Pendanthura* sp.		x	x		x		x				
ISOPODA	EXPANATHURIDAE	*Eisothistos* n. sp.					x	x					
ISOPODA	CIROLANIDAE	*Metacirolana* sp.		x	x								
ISOPODA	LIMNORIIDAE	*Limnoria* sp.					x	x					
ISOPODA	SPHAEROMATIDAE	*Hadromastax* sp.		x									
ISOPODA	SPHAEROMATIDAE	*Neonaesa rugosa*		x	x						x		x
ISOPODA	SPHAEROMATIDAE	*Sphaeromatidae* n. gen.							x	x		x	
ISOPODA	JANIRIDAE	*Carpias* sp.		x	x	x			x	x			
ISOPODA	JOEROPSIDAE	*Joeropsis* sp.		x	x				x		x		
ISOPODA	STENETRIIDAE	*Mizothenar* sp.		x	x				x				
ISOPODA	STENETRIIDAE	*Stenetrium* sp.							x				x
ISOPODA	LIGIIDAE	*Ligia exotica*	Introduced				x						
TANAIDACEA	TANAIDAE	unid. Tanaidae					x						
STENOPODIDEA	STENOPODIDAE	*Stenopus hispidus*			x	x			x				x
CARIDEA	PALAEMONIDAE (PONTONIINAE)	*Periclimenes* sp.				x			x		x		
CARIDEA	ALPHEIDAE	*Alpheus bucephalus*			x					x		x	
CARIDEA	ALPHEIDAE	*Alpheus collumianus*							x				
CARIDEA	ALPHEIDAE	*Alpheus gracilipes*						x					
CARIDEA	ALPHEIDAE	*Alpheus obesomanus*										x	
CARIDEA	ALPHEIDAE	*Alpheus pachychirus*			x							x	
CARIDEA	ALPHEIDAE	*Alpheus paralcyone*					x						
CARIDEA	ALPHEIDAE	*Alpheus parvirostris*					x			x			
CARIDEA	ALPHEIDAE	*Synalpheus coutierei*											x
CARIDEA	ALPHEIDAE	*Synalpheus gracilirostris*					x						
CARIDEA	ALPHEIDAE	*Synalpheus paraneomeris*					x		x				
CARIDEA	ALPHEIDAE	*Synalpheus redactocarpus*		x									
CARIDEA	ALPHEIDAE	*Synalpheus streptodactylus*				x	x	x	x	x			
CARIDEA	HIPPOLYTIDAE	*?Saron* spp.				x			x				
CARIDEA	HIPPOLYTIDAE	*Thor* sp.				x			x				
BRACHYURA	GRAPSIDAE	*Grapsus* sp.					x						
BRACHYURA	GRAPSIDAE	*Metopograpsus* sp.					x						
BRACHYURA	GRAPSIDAE	*Pachygrapsus minutus*					x			x			
BRACHYURA	GRAPSIDAE	*Plagusia tuberculata*			x								
BRACHYURA	PORTUNIDAE	*Thalamita* sp. 1				x			x	x		x	x
BRACHYURA	CARPILIIDAE	*Carpilius convexus*				x							
BRACHYURA	CARPILIIDAE	*Carpilius maculatus*				x							
BRACHYURA	PILUMNIDAE	*Pilumnus* sp. 1					x						

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
BRACHYURA	TRAPEZIIDAE	*Coralliophaga coralliophaga* complex							x	x	x		
BRACHYURA	TRAPEZIIDAE	*Domecia glabra*								x			
BRACHYURA	DAIRIDAE	*Daira perlata*		x	x				x	x	x		x
BRACHYURA	PANOPEIDAE	*Panopeus pacificus*	Introduced				x						
BRACHYURA	XANTHIDAE	*Actaeodes tomentosus*			x	x			x	x	x		x
BRACHYURA	XANTHIDAE	*Chlorodiella barbata*					x	x		x			
BRACHYURA	XANTHIDAE	*Chlorodiella cythera*										x	
BRACHYURA	XANTHIDAE	*Chlorodiella laevissima*			x					x	x	x	
BRACHYURA	XANTHIDAE	*Chlorodiella nigra*								x	x	x	
BRACHYURA	XANTHIDAE	*Etisus ?utilis*				x							
BRACHYURA	XANTHIDAE	*Liomera monticulosa*								x			
BRACHYURA	XANTHIDAE	*Neoliomera pubescens*					x						x
BRACHYURA	XANTHIDAE	*Neoliomera* sp.								x			
BRACHYURA	XANTHIDAE	*Paractaea* sp.					x						
BRACHYURA	XANTHIDAE	*Phymodius ungulatus*			x								
BRACHYURA	XANTHIDAE	*Pilodius flavus*			x		x						
BRACHYURA	XANTHIDAE	*Pilodius maotieni*											x
BRACHYURA	XANTHIDAE	*Pilodius pubescens*								x			
BRACHYURA	XANTHIDAE	*Pilodius pugil*					x						
BRACHYURA	XANTHIDAE	*Pilodius* sp.								x			
BRACHYURA	XANTHIDAE	*Pseudoliomera variolosa*								x			
BRACHYURA	XANTHIDAE	unid. Xanthidae					x	x					
BRACHYURA	XANTHIDAE	*Xanthias* sp.			x								
BRACHYURA	XANTHIDAE	*Zosimus aeneus*				x			x				
BRACHYURA	MAJIDAE	*Camposia retusa*			x								
BRACHYURA	MAJIDAE	*Menaethuis* sp.			x								
BRACHYURA	MAJIDAE	*Tylocarcinus dumerilii*		x									
BRACHYURA	MAJIDAE	unid. Majidae					x						
BRACHYURA	AETHRIDAE	*Aethra scruposa*			x								
BRACHYURA	CALAPPIDAE	*Calappa hepatica*				x							
BRACHYURA	LEUCOSIIDAE	*Leucosia* sp. 1				x			x				
PALINURIDEA	SCYLLARIDAE	*Parribacus antarcticus*				x			x				
ANOMURA	DIOGENIDAE	*Aniculus ursus*							x				
ANOMURA	DIOGENIDAE	*Calcinus lineapropodus*											x
ANOMURA	DIOGENIDAE	*Calcinus elegans*											
ANOMURA	DIOGENIDAE	*Calcinus guamensis*							x				
ANOMURA	DIOGENIDAE	*Calcinus haigae*			x								
ANOMURA	DIOGENIDAE	*Calcinus laevimanus*							x				

Taxa	Family	Species	Status	Station									
				1	2	3	4	5	6	7	8	9	10
ANOMURA	DIOGENIDAE	*Calcinus latens*			x	x	x	x	x	x	x	x	x
ANOMURA	DIOGENIDAE	*Calcinus minutus*			x	x			x	x	x	x	x
ANOMURA	DIOGENIDAE	*Calcinus morgani*		x	x	x	x	x	x		x	x	x
ANOMURA	DIOGENIDAE	*Ciliopagurus strigatus*		x	x	x			x	x	x	x	
ANOMURA	DIOGENIDAE	*Dardanus deformis*				x							
ANOMURA	DIOGENIDAE	*Dardanus guttatus*			x	x					x		x
ANOMURA	DIOGENIDAE	*Dardanus lagopodes*		x	x	x			x	x	x	x	x
ANOMURA	DIOGENIDAE	*Dardanus megistos*						x					
ANOMURA	DIOGENIDAE	*Dardanus* sp.										x	
ANOMURA	DIOGENIDAE	*Diogenes biramus*								x			
ANOMURA	PAGURIDAE	*?Pagurixus* sp.							x				
ANOMURA	PAGURIDAE	*Pagurixus ?laevimanus*			x				x				
ANOMURA	GALATHEIDAE	*Galathea* sp.								x			
ECTOPROCTA	CELLEPORIDAE	*Celleporaria* spp.					x						
ECTOPROCTA	CELLEPORIDAE	*Celleporaria?*			x								
ECTOPROCTA	CREPIDACANTHIDAE	*Crepidicantha longiseta*		x									
ECTOPROCTA	SAVIGNYELLIDAE	*Savignyella lafontii*	Introduced	x		x	x						
ECTOPROCTA	SCHIZOPORELLIDAE	*Schizoporella* cf. *errata*	Introduced				x	x					
ECTOPROCTA	SMITTINIDAE	*Parasmittina* sp. 1		x									
ECTOPROCTA	SMITTINIDAE	*Parasmittina* spp.					x						
ECTOPROCTA	SMITTINIDAE	*Smittina?* sp.			x								
ECTOPROCTA	TETRAPLARIIDAE	*Tetraplaria ventricosa*											
ECTOPROCTA	ARACHNOPUSIIDAE	*Poricella robusta*	Cryptogenic				x						
ECTOPROCTA	WATERSIPORIDAE	*Watersipora subtorquata*	Introduced				x						
ECTOPROCTA	BEANIIDAE	*Beania* sp.			x								
ECTOPROCTA	BUGULIDAE	*Bugula dentata*	Introduced			x							
ECTOPROCTA	BUGULIDAE	*Bugula neritina*	Introduced				x						
ECTOPROCTA	CRIBRILINIDAE	*Cribrilaria radiata*		x									
ECTOPROCTA	EPISTOMIIDAE	*Synnotum aegyptiacum*				x							
ECTOPROCTA	SCRUPOCELLARIIDAE	*Caberea boryi*		x									
ECTOPROCTA	SCRUPOCELLARIIDAE	*Scrupocellaria sinuosa?*		x									
ECTOPROCTA	AETEIDAE	*Aetea* sp.					x						
ECTOPROCTA	HINCKSINIDAE	*Antropora granulifera*		x									
ECTOPROCTA	VESICULARIIDAE	*Amathia* sp.					x						
ECTOPROCTA	TUBULIPORIDAE	*Tubulipora pulcherrima*				x	x						
ECTOPROCTA	CRISIIDAE	*Crisia* sp.1		x									
ECTOPROCTA	CRISIIDAE	*Crisia* sp.2		x		x							
ECTOPROCTA	CRISIIDAE	*Crisia* sp. 3					x						
BRACHIOPODA	LAQUEIDAE	*Frenulina sanguinolenta*							x				

Taxa	Family	Species	Status	Station									
				1	2	3	4	5	6	7	8	9	10
CRINOIDEA	COMASTERIDAE	*Comanthus* sp.								x			
CRINOIDEA	COMASTERIDAE	*Comanthus wahlbergii*							x	x	x		
CRINOIDEA	COMASTERIDAE	*Phanogenia gracilis*											x
CRINOIDEA	COLOBOMETRIDAE	*?Oligometra serripinna* (juvenile)											x
CRINOIDEA	MARIAMETRIDAE	*?Stephanometra indica* (juvenile)								x	x		
ASTEROIDEA	ACANTHASTERIDAE	*Acanthaster planci*		x		x					x		x
ASTEROIDEA	ASTEROPSEIDAE	*Asteropsis carinifera*				x							
ASTEROIDEA	MITHRODIIDAE	*Mithrodia clavigera*											
ASTEROIDEA	OREASTERIDAE	*Culcita novaeguineae*											x
ASTEROIDEA	OPHIDIASTERIDAE	*Fromia nodosa*								x	x		
ASTEROIDEA	OPHIDIASTERIDAE	*Fromia* sp. 1				x		x	x				
ASTEROIDEA	OPHIDIASTERIDAE	*Fromia* sp. 2			x				x				
ASTEROIDEA	OPHIDIASTERIDAE	*Gomophia egyptica*			x			x					x
ASTEROIDEA	OPHIDIASTERIDAE	*Leiaster speciosus*				x							
ASTEROIDEA	OPHIDIASTERIDAE	*Linckia laevigata*		x	x	x			x				x
ASTEROIDEA	OPHIDIASTERIDAE	*Linkia multiflora*		x	x	x		x	x	x	x	x	x
ASTEROIDEA	OPHIDIASTERIDAE	*Neoferdina* cf. *cumingi*			x								
OPHIUROIDEA	OPHIOCOMIDAE	*?Macrophiothrix* sp.			x				x				
OPHIUROIDEA	OPHIOCOMIDAE	*Ophiarthrum elegans*		x	x	x			x	x	x	x	x
OPHIUROIDEA	OPHIOCOMIDAE	*Ophiocoma brevipes*		x	x								x
OPHIUROIDEA	OPHIOCOMIDAE	*Ophiocoma erinaceus*		x	x	x			x	x	x	x	x
OPHIUROIDEA	OPHIOCOMIDAE	*Ophiocoma* sp. (juvenile)										x	
OPHIUROIDEA	OPHIOCOMIDAE	*Ophiocomella sexradia*		x	x							x	x
OPHIUROIDEA	OPHIOCOMIDAE	*Ophiomastix caryophyllata*		x	x				x		x		x
OPHIUROIDEA	OPHIOCOMIDAE	*Ophiomastix mixta*		x	x	x					x	x	
OPHIUROIDEA	OPHIURIDAE	*Ophiolepis cincta*											x
OPHIUROIDEA	OPHIURIDAE	*Ophioplocus imbricatus*											x
OPHIUROIDEA	OPHIONEREIDIDAE	*Ophionereis ?porrecta* (juvenile)										x	
OPHIUROIDEA	OPHIOTRICHIDAE	*Macrophiothrix longipeda*											x
OPHIUROIDEA	OPHIOTRICHIDAE	*Macrophiothrix* sp.							x				
OPHIUROIDEA	OPHIOTRICHIDAE	*Ophiothrix* sp. 1							x				
OPHIUROIDEA	OPHIOTRICHIDAE	*Ophiothrix* sp. 2							x				
OPHIUROIDEA	OPHIOTRICHIDAE	*Ophiotrichidae* sp.								x			x
OPHIUROIDEA	AMPHIURIDAE	*Amphiura* sp.										x	
OPHIUROIDEA	OPHIACTIDAE	*Ophiactis savignyi*				x			x	x	x	x	x
OPHIUROIDEA	OPHIACTIDAE	*Ophiactis* sp. 1				x				x		x	
OPHIUROIDEA	OPHIACTIDAE	*Ophiactis* sp. 2				x							
ECHINOIDEA	CIDARIDAE	*Eucidaris metalaria*			x					x		x	
ECHINOIDEA	DIADEMATIDAE	*Diadema ?savignyi*				x		x			x		

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
ECHINOIDEA	DIADEMATIDAE	*Echinothrix calamaris*		x	x	x	x	x	x		x		
ECHINOIDEA	DIADEMATIDAE	*Echinothrix diadema*			x	x	x	x	x	x	x	x	x
ECHINOIDEA	TEMNOPLEURIDAE	*Mespilia globulus*			x	x	x	x	x				
ECHINOIDEA	ECHINOMETRIDAE	*Echinometra mathaei*		x	x	x			x	x	x	x	x
ECHINOIDEA	ECHINOMETRIDAE	*Echinometra oblonga*		x		x							
ECHINOIDEA	ECHINOMETRIDAE	*Echinometra* sp. (white tip)			x	x							x
ECHINOIDEA	ECHINOMETRIDAE	*Echinostrephus asciculari*s		x	x	x			x	x	x	x	x
HOLOTHUROIDEA	HOLOTHURIIDAE	*Actinopyga echinites*				x							
HOLOTHUROIDEA	HOLOTHURIIDAE	*Actinopyga mauritiana*				x			x				
HOLOTHUROIDEA	HOLOTHURIIDAE	*Bohadschia argus*			x	x			x				
HOLOTHUROIDEA	HOLOTHURIIDAE	*Bohadshia marmarata*				x							
HOLOTHUROIDEA	HOLOTHURIIDAE	*Holothuria (Halodeima) atra*		x	x	x			x	x	x		x
HOLOTHUROIDEA	HOLOTHURIIDAE	*Holothuria (Mertensiothuria) leucospilota*				x			x				
HOLOTHUROIDEA	HOLOTHURIIDAE	*Holothuria (Microthele) whitmaei*							x				
HOLOTHUROIDEA	HOLOTHURIIDAE	*Holothuria (Stauropora) pervicax*				x							
HOLOTHUROIDEA	HOLOTHURIIDAE	*Holothuria (Thymiosycia) hilla*			x	x			x				
HOLOTHUROIDEA	STICHOPODIDAE	*Stichopus chloronotus*				x			x				
HOLOTHUROIDEA	STICHOPODIDAE	*Stichopus horrens*							x	x			
HOLOTHUROIDEA	SYNAPTIDAE	*Opheodesoma* sp. 1							x				x
HOLOTHUROIDEA	SYNAPTIDAE	*Opheodesoma* sp. 2											
HOLOTHUROIDEA	SYNAPTIDAE	*Synapta maculata*				x	?			x			
ASCIDIACEA	DIDEMNIDAE	*Didemnum molle*											x
ASCIDIACEA	DIDEMNIDAE	*Diplosoma* spp.						x	x		x	x	
ASCIDIACEA	DIDEMNIDAE	*Diplosoma* sp.				x			x				
ASCIDIACEA	DIDEMNIDAE	unid. Didemnidae						x	x	x		x	x
ASCIDIACEA	POLYCLINIDAE	unid. Polyclinidae							x			x	
ASCIDIACEA	ASCIDIIDAE	*Phallusia (Ascidia)* cf. *nigra*	Introduced				x						
ASCIDIACEA	STYELIDAE	*Cnemidocarpa* sp.						x		x			
ASCIDIACEA	STYELIDAE	*Eusynstyela* sp.							x				x
ASCIDIACEA	STYELIDAE	*Polyandrocarpa* sp.					x						
ASCIDIACEA	STYELIDAE	*Polycarpa* sp.							x				x
ASCIDIACEA	STYELIDAE	*Styela canopus*	Introduced				x	x		x			
ASCIDIACEA	PYURIDAE	*Microcosmus* sp.					x	x			x		
ASCIDIACEA	PYURIDAE	*Pyura* sp.							x				
ELASMOBRANCHII	CARCHARHINIDAE	*Carcharhinus melanopterus*		x									
ACTINOPTERYGII	MURAENIDAE	*Gymnothorax ?fimbriatus*					x						
ACTINOPTERYGII	MURAENIDAE	*Gymnothorax javanicus*			x	x		x	x		x		
ACTINOPTERYGII	MURAENIDAE	*Gymnothorax meleagris*		x	x	x						x	

Taxa	Family	Species	Status	Station									
				1	2	3	4	5	6	7	8	9	10
ACTINOPTERYGII	SYNODONTIDAE	*Synodus variegatus*				x	x						
ACTINOPTERYGII	BELONIDAE	*Tylosurus crocodilus*			x	x						x	
ACTINOPTERYGII	HOLOCENTRIDAE	*Myripristis murdjan*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	HOLOCENTRIDAE	*Neoniphon sammara*		x	x	x	x			x		x	x
ACTINOPTERYGII	HOLOCENTRIDAE	*Sargocentron microstoma*		x		x			x		x	x	x
ACTINOPTERYGII	HOLOCENTRIDAE	*Sargocentron spiniferum*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	HOLOCENTRIDAE	*Sargocentron tiere*				x			x				
ACTINOPTERYGII	AULOSTOMIDAE	*Aulostomus chinensis*		x		x			x	x		x	x
ACTINOPTERYGII	FISTULARIIDAE	*Fistularia commersonii*		x		x			x				
ACTINOPTERYGII	SYNGNATHIDAE	*Corythoichthys ?flavofasciatus*		x	x	x	x	x	x	x	x		
ACTINOPTERYGII	SYNGNATHIDAE	*Corythoichthys intestinalis*		x	x	x	x	x	x	x	x		x
ACTINOPTERYGII	SYNGNATHIDAE	*Corythoichthys* sp.				x	x		x	x	x	x	
ACTINOPTERYGII	SCORPAENIDAE	*Pterois antennata*				x			x		x		x
ACTINOPTERYGII	SCORPAENIDAE	*Pterois radiata*		x		x			x				
ACTINOPTERYGII	SCORPAENIDAE	*Scorpaenopsis* sp.		x	x	x			x	x	x	x	x
ACTINOPTERYGII	SCORPAENIDAE	*Synanceia verrucosa*					x						
ACTINOPTERYGII	SERRANIDAE	*Cephalopholis argus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	SERRANIDAE	*Cephalopholis urodeta*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	SERRANIDAE	*Epinephelus merra*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	SERRANIDAE	*Epinephelus ?tauvina*		x								x	
ACTINOPTERYGII	SERRANIDAE	*Plectropomus laevis*							x	x	x	x	
ACTINOPTERYGII	SERRANIDAE	*Plectropomus ?leopardus*		x									
ACTINOPTERYGII	PRIACANTHIDAE	*Heteropriacanthus cruentatus*			x							x	
ACTINOPTERYGII	APOGONIDAE	*Apogon ?novemfasciatus*		x		x			x			x	x
ACTINOPTERYGII	MALACANTHIDAE	*Malacanthus brevirostris*		x	x				x			x	x
ACTINOPTERYGII	CARANGIDAE	*Caranx melampygus*		x	x	x			x	x	x	x	
ACTINOPTERYGII	CARANGIDAE	*Caranx sexfasciatus*					x	x					x
ACTINOPTERYGII	LUTJANIDAE	*Aphareus furca*		x	x				x		x		x
ACTINOPTERYGII	LUTJANIDAE	*Aprion virescens*			x							x	
ACTINOPTERYGII	LUTJANIDAE	*Lutjanus bohar*			x								x
ACTINOPTERYGII	LUTJANIDAE	*Lutjanus fulvus*				x	x	x	x	x	x	x	x
ACTINOPTERYGII	LUTJANIDAE	*Lutjanus gibbus*				x			x	x	x		
ACTINOPTERYGII	LUTJANIDAE	*Lutjanus monostigmus*		x	x	x				x	x		x
ACTINOPTERYGII	LUTJANIDAE	*Macolor macularis*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	LUTJANIDAE	*Macolor niger*		x	x	x			x	x		x	
ACTINOPTERYGII	CAESIONIDAE	*Caesio teres*								x	x	x	x
ACTINOPTERYGII	CAESIONIDAE	*Pterocaesio marri*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	CAESIONIDAE	*Pterocaesio tile*		x								x	
ACTINOPTERYGII	HAEMULIDAE	*Plectorhinchus orientalis*		x		x			x	x	x	x	x

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
ACTINOPTERYGII	LETHRINIDAE	*Gnathodentex aurolineatus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	LETHRINIDAE	*Lethrinus harak*		x	x				x				x
ACTINOPTERYGII	LETHRINIDAE	*Monotaxis grandoculis*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	NEMIPTERIDAE	*Scolopsis trilineatus*		x	x				x			x	x
ACTINOPTERYGII	MULLIDAE	*Mulloidichthys flavolineatus*		x		x			x	x	x		
ACTINOPTERYGII	MULLIDAE	*Mulloidichthys vanicolensis*		x		x						x	x
ACTINOPTERYGII	MULLIDAE	*Parupeneus barberinus*			x	x			x	x	x	x	x
ACTINOPTERYGII	MULLIDAE	*Parupeneus bifasciatus*		x	x	x				x	x	x	x
ACTINOPTERYGII	MULLIDAE	*Parupeneus cyclostomus*		x	x	x			x			x	
ACTINOPTERYGII	MULLIDAE	*Parupeneus multifasciatus*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	PEMPHERIDAE	*Pempheris oualensis*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	KYPHOSIDAE	*Kyphosus cinerascens*		x		x			x	x	x	x	x
ACTINOPTERYGII	KYPHOSIDAE	*Kyphosus vaigiensis*								x			x
ACTINOPTERYGII	EPHIPPIDAE	*Platax orbicularis*				x							
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon auriga*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon citrinellus*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon ephippium*		x	x	x		x	x	x	x	x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon lunula*		x		x	x		x			x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon melannotus*		x		x			x			x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon mertensii*			x	x						x	
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon ornatissimus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon punctatofasciatus*			x				x	x	x	x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon rafflesi*		x		x			x		x		x
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon reticulatus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon semeion*		x								x	
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon trifascialis*		x		x			x		x	x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon ulietensis*		x	x	x	x		x			x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon unimaculatus*		x		x			x	x	x	x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Chaetodon vagabundus*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Forcipiger flavissimus*		x		x	x	x	x	x	x	x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Forcipiger longirostris*		x	x	x			x		x	x	
ACTINOPTERYGII	CHAETODONTIDAE	*Hemitaurichthys polylepis*			x							x	
ACTINOPTERYGII	CHAETODONTIDAE	*Heniochus acuminatus*							x				
ACTINOPTERYGII	CHAETODONTIDAE	*Heniochus chrysostomus*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Heniochus monoceros*		x	x	x	x	x	x	x		x	x
ACTINOPTERYGII	CHAETODONTIDAE	*Heniochus varius*		x	x	x	x		x	x	x	x	x
ACTINOPTERYGII	POMACANTHIDAE	*Centropyge bicolor*			x	x				x	x	x	
ACTINOPTERYGII	POMACANTHIDAE	*Centropyge bispinosus*		x	x	x	x		x	x	x	x	x
ACTINOPTERYGII	POMACANTHIDAE	*Centropyge flavissima*		x	x	x			x	x	x	x	x

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ACTINOPTERYGII	POMACANTHIDAE	*Centropyge loricula*			x							x	x
ACTINOPTERYGII	POMACANTHIDAE	*Pomacanthus imperator*		x	x	x					x		x
ACTINOPTERYGII	POMACANTHIDAE	*Pygoplites diacanthus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	POMACENTRIDAE	*Abudefduf septemfasciatus*		x		x			x	x			x
ACTINOPTERYGII	POMACENTRIDAE	*Abudefduf sexfasciatus*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	POMACENTRIDAE	*Amphiprion chrysopterus*		x	x	x			x			x	
ACTINOPTERYGII	POMACENTRIDAE	*Amphiprion clarkii*			x								
ACTINOPTERYGII	POMACENTRIDAE	*Chromis acares*			x	x			x			x	
ACTINOPTERYGII	POMACENTRIDAE	*Chromis amboinensis*			x					x		x	
ACTINOPTERYGII	POMACENTRIDAE	*Chromis iomelas*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	POMACENTRIDAE	*Chromis margaritifer*		x	x	x	x		x	x	x	x	x
ACTINOPTERYGII	POMACENTRIDAE	*Chromis viridis*		x					x			x	x
ACTINOPTERYGII	POMACENTRIDAE	*Chromis xanthura*		x	x				x	x		x	x
ACTINOPTERYGII	POMACENTRIDAE	*Chrysiptera biocellata*				x			x				
ACTINOPTERYGII	POMACENTRIDAE	*Chrysiptera brownriggii*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	POMACENTRIDAE	*Chrysiptera cyanea*		x	x	x			x	x		x	x
ACTINOPTERYGII	POMACENTRIDAE	*Chrysiptera glauca*		x		x			x				
ACTINOPTERYGII	POMACENTRIDAE	*Dascyllus aruanus*		x		x	x	x	x		x	x	x
ACTINOPTERYGII	POMACENTRIDAE	*Dascyllus reticulatus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	POMACENTRIDAE	*Dascyllus trimaculatus*		x	x	x			x			x	
ACTINOPTERYGII	POMACENTRIDAE	*Neopomacentrus ?metallicus*		x								x	
ACTINOPTERYGII	POMACENTRIDAE	*Plectroglyphidodon dickii*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	POMACENTRIDAE	*Plectroglyphidodon johnstonianus*		x	x	x			x			x	
ACTINOPTERYGII	POMACENTRIDAE	*Plectroglyphidodon lacrymatus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	POMACENTRIDAE	*Pomacentrus coelestis*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	POMACENTRIDAE	*Pomacentrus vaiuli*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	POMACENTRIDAE	*Pomachromis* sp.		x	x	x			x			x	
ACTINOPTERYGII	POMACENTRIDAE	*Stegastes albifasciatus*							x	x			
ACTINOPTERYGII	POMACENTRIDAE	*Stegastes fasciolatus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	POMACENTRIDAE	*Stegastes nigricans*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	CIRRHITIDAE	*Paracirrhites arcatus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	CIRRHITIDAE	*Paracirrhites forsteri*		x	x				x	x	x	x	x
ACTINOPTERYGII	CIRRHITIDAE	*Paracirrhites hemistictus*		x	x	x			x			x	
ACTINOPTERYGII	MUGILIDAE	*Valamugil engeli*				x							x
ACTINOPTERYGII	LABRIDAE	*Anampses meleagrides*		x									
ACTINOPTERYGII	LABRIDAE	*Anampses twistii*		x		x			x		x	x	
ACTINOPTERYGII	LABRIDAE	*Bodianus axillaris*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	LABRIDAE	*Cheilinus chlorourus*		x					x	x		x	x
ACTINOPTERYGII	LABRIDAE	*Cheilinus fasciatus*				x			x	x	x	x	x

Taxa	Family	Species	Status	Station 1	2	3	4	5	6	7	8	9	10
ACTINOPTERYGII	LABRIDAE	*Cheilinus trilobatus*									x	x	
ACTINOPTERYGII	LABRIDAE	*Cheilinus undulatus*		x									x
ACTINOPTERYGII	LABRIDAE	*Cirrhilabrus* sp.		x					x	x		x	
ACTINOPTERYGII	LABRIDAE	*Coris aygula*		x					x			x	
ACTINOPTERYGII	LABRIDAE	*Coris gaimard*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	LABRIDAE	*Epibulus insidiator*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	LABRIDAE	*Gomphosus varius*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	LABRIDAE	*Halichoeres hortulanus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	LABRIDAE	*Halichoeres margaritaceus* complex		x		x			x	x	x	x	x
ACTINOPTERYGII	LABRIDAE	*Halichoeres marginatus*							x			x	
ACTINOPTERYGII	LABRIDAE	*Halichoeres melanurus*		x									
ACTINOPTERYGII	LABRIDAE	*Halichoeres prosopeion*		x	x	x			x	x		x	x
ACTINOPTERYGII	LABRIDAE	*Hemigymnus fasciatus*			x	x						x	x
ACTINOPTERYGII	LABRIDAE	*Hemigymnus melapterus*		x	x	x	x		x	x	x	x	x
ACTINOPTERYGII	LABRIDAE	*Labrichthys unilineatus*										x	
ACTINOPTERYGII	LABRIDAE	*Labroides bicolor*				x			x	x	x		
ACTINOPTERYGII	LABRIDAE	*Labroides dimidiatus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	LABRIDAE	*Labroides ?rubrolabiatus*		x								x	
ACTINOPTERYGII	LABRIDAE	*Labropsis xanthonota*		x					x			x	
ACTINOPTERYGII	LABRIDAE	*Macropharyngodon meleagris*		x	x	x						x	x
ACTINOPTERYGII	LABRIDAE	*Novaculichthys taeniourus*		x		x			x	x	x	x	x
ACTINOPTERYGII	LABRIDAE	*Oxycheilinus* sp.		x								x	
ACTINOPTERYGII	LABRIDAE	*Oxycheilinus unifasciatus*		x		x			x	x	x	x	x
ACTINOPTERYGII	LABRIDAE	*Pseudocheilinus hexataenia*		x	x	x	x		x	x	x	x	x
ACTINOPTERYGII	LABRIDAE	*Pseudocheilinus octotaenia*		x					x			x	
ACTINOPTERYGII	LABRIDAE	*Stethojulis bandanensis*							x				
ACTINOPTERYGII	LABRIDAE	*Stethojulis strigiventer*		x		x			x		x	x	x
ACTINOPTERYGII	LABRIDAE	*Thalassoma hardwicke*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	LABRIDAE	*Thalassoma lutescens*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	LABRIDAE	*Thalassoma purpureum*							x				
ACTINOPTERYGII	LABRIDAE	*Thalassoma quinquevittatum*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	SCARIDAE	*Cetoscarus bicolor*			x				x			x	
ACTINOPTERYGII	SCARIDAE	*Chlorurus sordidus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	SCARIDAE	*Chlorurus microrhinos*			x							x	
ACTINOPTERYGII	SCARIDAE	*Scarus forsteni*		x	x							x	
ACTINOPTERYGII	SCARIDAE	*Scarus frenatus*										x	
ACTINOPTERYGII	SCARIDAE	*Scarus globiceps*			x								
ACTINOPTERYGII	SCARIDAE	*Scarus oviceps*		x	x	x			x	x	x	x	x

Taxa	Family	Species	Status	Station									
				1	2	3	4	5	6	7	8	9	10
ACTINOPTERYGII	SCARIDAE	*Scarus psittacus*		x		x			x	x			x
ACTINOPTERYGII	SCARIDAE	*Scarus rubroviolaceus*		x	x	x			x	x		x	x
ACTINOPTERYGII	SCARIDAE	*Scarus schlegeli*			x						x	x	
ACTINOPTERYGII	PINGUIPEDIDAE	*Parapercis clathrata*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	PINGUIPEDIDAE	*Parapercis* sp.			x	x					x		x
ACTINOPTERYGII	GOBIIDAE	*Valenciennea strigata*		x								x	
ACTINOPTERYGII	MICRODESMIDAE	*Nemateleotris magnifica*							x	x	x	x	x
ACTINOPTERYGII	MICRODESMIDAE	*Ptereleotris heteroptera*		x	x								
ACTINOPTERYGII	MICRODESMIDAE	*Ptereleotris* sp.			x							x	
ACTINOPTERYGII	SIGANIDAE	*Siganus argenteus*		x	x	x			x	x		x	x
ACTINOPTERYGII	SIGANIDAE	*Siganus spinus*		x									
ACTINOPTERYGII	ZANCLIDAE	*Zanclus cornutus*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus achilles*		x	x							x	x
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus blochii*		x					x				
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus dussumieri*										x	
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus guttatus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus lineatus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus maculiceps*		x								x	
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus nigricans*		x	x	x			x		x	x	x
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus nigricauda*								x		x	
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus nigrofuscus*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus nigroris*		x					x	x	x	x	x
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus olivaceus*		x	x							x	x
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus pyroferus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus thompsoni*										x	
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus triostegus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	ACANTHURIDAE	*Acanthurus xanthopterus*				x	x	x	x	x	x		x
ACTINOPTERYGII	ACANTHURIDAE	*Ctenochaetus strigosus*		x					x	x	x	x	x
ACTINOPTERYGII	ACANTHURIDAE	*Naso annulatus*					x						
ACTINOPTERYGII	ACANTHURIDAE	*Naso lituratus*		x	x	x	x		x	x	x	x	x
ACTINOPTERYGII	ACANTHURIDAE	*Naso tuberosus*		x								x	
ACTINOPTERYGII	ACANTHURIDAE	*Naso unicornis*				x					x		x
ACTINOPTERYGII	ACANTHURIDAE	*Zebrasoma scopas*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	ACANTHURIDAE	*Zebrasoma veliferum*		x	x	x	x	x	x	x	x	x	x
ACTINOPTERYGII	SCOMBRIDAE	*Gymnosarda unicolor*			x								
ACTINOPTERYGII	SOLEIDAE	*Pardachirus pavoninus*				x							
ACTINOPTERYGII	BALISTIDAE	*Balistapus undulatus*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	BALISTIDAE	*Balistoides conspicillum*			x								
ACTINOPTERYGII	BALISTIDAE	*Balistoides viridescens*			x						x	x	

Taxa	Family	Species	Status	Station									
				1	2	3	4	5	6	7	8	9	10
ACTINOPTERYGII	BALISTIDAE	*Melichthys niger*			x							x	x
ACTINOPTERYGII	BALISTIDAE	*Melichthys vidua*		x	x				x			x	x
ACTINOPTERYGII	BALISTIDAE	*Pseudobalistes flavimarginatus*		x		x	x	x	x	x	x	x	x
ACTINOPTERYGII	BALISTIDAE	*Rhinecanthus aculeatus*				x	x		x		x		x
ACTINOPTERYGII	BALISTIDAE	*Rhinecanthus rectangulus*				x			x	x	x		
ACTINOPTERYGII	BALISTIDAE	*Sufflamen bursa*		x	x				x	x	x	x	x
ACTINOPTERYGII	BALISTIDAE	*Sufflamen chrysopterus*		x	x	x					x		
ACTINOPTERYGII	MONACANTHIDAE	*Amanses scopas*		x	x	x			x		x	x	
ACTINOPTERYGII	MONACANTHIDAE	*Cantherhines dumerilii*		x	x							x	x
ACTINOPTERYGII	MONACANTHIDAE	*Oxymonacanthus longirostris*		x					x				
ACTINOPTERYGII	MONACANTHIDAE	*Pervagor janthinosoma*										x	
ACTINOPTERYGII	TETRAODONTIDAE	*Arothron meleagris*			x	x							
ACTINOPTERYGII	TETRAODONTIDAE	*Arothron nigropunctatus*		x	x				x	x	x	x	x
ACTINOPTERYGII	TETRAODONTIDAE	*Canthigaster solandri*		x	x	x			x	x	x	x	x
ACTINOPTERYGII	TETRAODONTIDAE	*Canthigaster valentini*					x						
ACTINOPTERYGII	DIODONTIDAE	*Diodon liturosus*		x		x	x		x	x	x	x	x
ACTINOPTERYGII	OSTRACIIDAE	*Ostracion cubicus*			x	x							
ACTINOPTERYGII	OSTRACIIDAE	*Ostracion meleagris*		x	x	x			x			x	

APPENDIX D

Corals and Fishes Observed in Moats and on the reef crest at Ofu Island, October 2002

Class	Family	*Genus Species*	Author Date
ANTHOZOA	MILLEPORIDAE	*Millepora platyphylla*	Hemprich & Ehrenberg, 1834
		Millepora dichotoma	(Forsskål, 1775)
	ASTROCOENIIDAE	*Stylocoeniella armata*	(Ehrenberg, 1834)
	POCILLOPORIDAE	*Pocillopora damicornis*	(Linnaeus, 1758)
		Pocillopora danae	Verrill, 1864
		Pocillopora meandrina	Dana, 1846
		Pocillopora setchelli	Hoffmeister, 1929
		Pocillopora eydouxi	Milne Edwards & Haime, 1860
		Pocillopora verrucosa	(Ellis & Solander, 1786)
	ACROPORIDAE	*Acropora* cf. *austera*	(Dana, 1846)
		Acropora craterformis	(Gardiner, 1898)
		Acropora muricata	(Linnaeus, 1758)
		Acropora gemmifera	(Brook, 1892)
		Acropora hyacinthus	(Dana, 1846)
		Acropora cf. *ocellata*	(Kluzinger, 1879)
		Acropora palmerae	Wells, 1954
		Acropora samoensis	(Brook, 1891)
		Acropora tenuis	(Dana, 1846)
		Acropora verweyi	Veron & Wallace, 1984
		Acropora valida	(Dana, 1846)
		Acropora ?pulchra	(Brook, 1891)
		Acropora ?yongei	Veron & Wallace, 1984
		Acropora cf. *surculosa*	(Dana, 1846)
		Acropora ?horrida	(Dana, 1846)
		Acropora abrotanoides	(Lamarck, 1816)
		Acropora acuminata	(Verrill, 1864)
		Acropora aff. *cophodactyla*	(Brook, 1892)
		Acropora digitifera	(Dana, 1846)
		Acropora cf. *globiceps*	(Dana, 1846)
		Acropora humilis	(Dana, 1846)
		Acropora ?donei	Veron & Wallace, 1984
		Acropora ?latistella	(Brook, 1891)
		Acropora ?prostrata	(Dana, 1846)
		Acropora sp. 1	
		Astreopora myriophthalma	(Lamarck, 1816)
		Montipora ?aequituberculata	Bernard, 1897
		Montipora conicula	Wells, 1954
		Montipora grisea	Bernard, 1897
		Montipora elshneri	Vaughan, 1918
		Montipora ehrenbergii	Verrill, 1975
		Montipora hoffmeisteri	Wells, 1954
		Montipora verrucosa	(Lamarck, 1816)
		Montipora socialis	Bernard 1897
		Montipora tuberculosa	(Lamarck, 1816)
		Montipora monasteriata	(Forsskål, 1775)
		Montipora berryi	Hoffmeister, 1925
		Montipora ?turgescens	Bernard, 1897
		Montipora sp. cf. *hoffmeisteri*	Wells, 1954
		Cyphastrea microphthalma	(Lamarck, 1816)

Taxa	Family	Genus Species	Author Date
ANTHOZOA	FAVIIDAE	*Cyphastrea serailia*	(Forsskål, 1775)
		Cyphastrea chalcidicum	(Forsskål, 1775)
		Echinopora gemmacea	Lamarck, 1816
		Echinopora ?hirsutissima	Milne Edwards & Haime, 1849
		Favia stelligera	Dana, 1846
		Favia matthaii	Vaughan, 1918
		Favia speciosa	Dana, 1846
		Favia pallida	Dana, 1846
		Favites abdita	Ellis & Solander, 1786
		Favites ?complanata	Ehrenberg, 1834
		Favites aff. *russelli*	(Wells, 1954)
		Goniastrea retiformis	(Lamarck, 1816)
		Goniastrea edwardsi	Chevalier, 1971
		Goniastrea ? aspera	Verrill, 1905
		Leptastrea purpurea	(Dana, 1846)
		Leptoria phrygia	(Ellis & Solander, 1786)
		Montastrea curta	(Dana, 1846)
		Montastrea sp. 1	
		Platygyra ?lamellina	(Ehrenberg, 1834)
		Platygyra pini	Chevalier, 1975
		Platygyra daedalea	(Ellis & Solander, 1786)
	PORITIDAE	*Porites lichen*	Dana, 1846
		Porites australiensis	Vaughan, 1918
		Porites lutea	Milne Edwards & Haime, 1860
		Porites lobata	Dana, 1846
		Porites annae	Crossland, 1952
		Porites cylindrica	Dana, 1846
		Porites rus	(Forsskål, 1775)
		Porites superfusa	Gardiner, 1898
		Porites ?murrayensis	Vaughan, 1918
		Stylarea punctata	(Linneaus, 1758)
	SIDERASTREIDAE	*Coscinerea columna*	(Dana, 1846)
		Psammocora haimeana	Milne Edwards & Haime, 1860
		Psammocora contigua	(Esper, 1797)
	AGARICIIDAE	*Leptoseris mycetoseroides*	Wells, 1954
		Pavona varians	Verrill, 1864
		Pavona sp. aff. *varians*	Randall & Myers 1983
		Pavona divaricata	(Lamark, 1816)
		Pavona decussata	(Dana, 1846)
		Pavona venosa	(Ehrenberg, 1834)
	FUNGIIDAE	*Fungia scutaria*	Lamarck, 1801
		Fungia fungites	(Linneaus, 1758)
	OCULINIDAE	*Galaxea fascicularis*	(Linneaus, 1767)
	DENDROPHYLLIIDAE	*Turbinarea reniformis*	Bernard, 1896
	MERULINIDAE	*Hydnophora microconos*	(Lamarck, 1816)
		Hydnophora ?pilosa	Veron, 1985
	MUSSIDAE	*Lobophyllia hemprichii*	(Ehrenberg, 1834)
		Symphyllia ?recta	(Dana, 1846)
	HELIOPORIDAE	*Heliopora coerulea*	(Pallas, 1776)
	Total Corals	98	

Class	Family	Genus Species	Author Date
OSTEICHTHYES	CARCARHINIDAE	*Carcharrhinus melanopterus*	(Quoy & Gaimard, 1824)
	MURAENIDAE	*Gymnothorax melegris*	(Shaw & Nodder, 1795)
		Gymnothorax ?fimbriatus	(Bennett, 1831)
	HOLOCENTRIDAE	*Myripristis murdjan*	(Forsskål, 1775)
		Sargocentron microstoma	(Günther, 1859)
		Sargocentron spiniferum	(Forsskål, 1775)
		Sargocentron tiere	(Cuvier, 1829)
	AULOSTOMIDAE	*Aulostomus chinensis*	(Linnaeus, 1758)
	FISTULARIDAE	*Fistularia commersonii*	Rüppell, 1838
	SYNGNATHIDAE	*Corythoichthys intestinalis*	(Ramsay, 1881)
		Corythoichthys sp.	
	SCORPAENIDAE	*Pterois antennata*	(Bloch, 1787)
		Scorpaenopsis spp.	
	APOGONIDAE	*Apogon ?novemfasciatus*	Cuvier, 1828
	CARANGIDAE	*Caranx melampygus*	Cuvier, 1833
		Caranx sexfasciatus	(Quoy & Gaimard, 1824)
	CAESIONIDAE	*Pterocaesio marri*	Schultz, 1953
	LUTJANIDAE	*Lutjanus fulvus*	(Bloch & Schneider, 1801)
	LETHRINIDAE	*Gnathodentex aurolineatus*	(Lacépède, 1802)
		Monotaxis grandoculus	(Forsskål, 1775)
	MULLIDAE	*Mulloides vanicolensis*	(Valenciennes, 1831)
		Parupeneus barberinus	(Lacépède, 1801)
		Parupeneus bifasciatus	(Lacépède, 1801)
		Parupeneus multifasciatus	(Quoy & Gaimard, 1825)
	KYPHOSIDAE	*Kyphosus vaigiensis*	(Quoy & Gaimard, 1825)
		Kyphosus cinerascens	(Forsskål, 1775)
	CHAETODONTIDAE	*Chaetodon auriga*	Forsskål, 1775
		Chaetodon citrinellus	Cuvier, 1831
		Chaetodon ephippium	Cuvier, 1831
		Chaetodon lunula	(Lacépède, 1803)
		Chaetodon melannotus	Bloch & Schneider, 1801
		Chaetodon ornatisimmus	Cuvier, 1831
		Chaetodon reticulatus	Cuvier, 1831
		Chaetodon semeion	Bleeker, 1855
		Chaetodon trifacialis	Quoy & Gaimard, 1824
		Chaetodon ulietensis	Cuvier, 1831
		Chaetodon unimaculatus	Bloch, 1787
		Chaetodon vagabundus	Linnaeus, 1758
		Forcipiger flavissimus	Jordan & McGregor, 1898
		Heniochus chrysotomus	Cuvier, 1831
		Heniochus monoceros	Cuvier, 1831
	CIRRHITIDAE	*Paracirrhites arcatus*	(Cuvier, 1829)
		Paracirrhites forsteri	(Schneider, 1801)
	POMACENTRIDAE	*Abudefduf septemfasciatus*	(Cuvier, 1830)
		Abudefduf sexfasciatus	(Lacépède, 1802)
		Centropyge flavissimus	(Cuvier, 1831)
		Chromis viridis	(Cuvier, 1830)
		Chrysiptera biocellata	(Quoy & Gaimard, 1824)
		Chrysiptera glauca	(Cuvier, 1830)
		Chrysiptera brownriggii	(Bennett, 1828)
		Dascyllus aruanus	(Linnaeus, 1758)

Class	Family	Genus Species	Author Date
OSTEICHTHYES	POMACENTRIDAE	*Dascyllus reticulatus*	(Richardson, 1846)
		Plectroglyphidodon lacrymatus	(Quoy & Gaimard, 1824)
		Pomacanthus imperator	(Bloch, 1787)
		Pomacentrus coelestis	Jordan & Starks, 1901
		Pomacentrus vaiuli	Jordan & Seale, 1906
		Pygoplites diacanthus	(Boddaert, 1772)
		Stegastes albifasciatus	(Schlegel & Müller, 1839-1844)
		Stegastes fasciolatus	(Ogilby, 1889)
		Stegastes nigricans	(Lacépède, 1802)
	SERRANIDAE	*Cephalopholis urodeta*	Bloch & Schneider, 1801
		Cephelopholis argus	(Bloch & Schneider, 1801)
		Epinephelus merra	Bloch, 1791
		Epinephelus ?tauvina	(Forsskål, 1775)
	LABRIDAE	*Cheilinus fasciatus*	(Bloch, 1791)
		Coris gaimard	(Quoy & Gaimard, 1824)
		Gomphosus varius	Lacépède, 1801
		Halichoeres hortulanus	(Lacépède, 1801)
		Halichoeres margaritaceus complex	
		Halichoeres marginatus	Rüppell, 1835
		Halichoeres melanurus	(Bleeker, 1851)
		Hemigymnus melapterus	(Bloch, 1791)
		Labroides bicolor	Fowler & Bean 1928
		Labroides dimidiatus	(Valenciennes, 1839)
		Pseudocheilinus hexataenia	(Bleeker, 1857)
		Stethojulis bandanensis	(Bleeker, 1851)
		Stethojulis strigiventer	(Bennett, 1832)
		Thalassoma hardwickii	(Bennett, 1828)
		Thalassoma lutescens	(Lay & Bennett, 1839)
		Thalassoma quinquevittatum	(Lay & Bennett, 1839)
		Thalassoma purpureum	(Forsskål, 1775)
	SCARIDAE	*Chlororus sordidus*	(Forsskål, 1775)
		Scarus frenatus	Lacépède, 1802
		Scarus oviceps	Valenciennes, 1840
		Scarus psittacus	Forsskål, 1775
	ACANTHURIDAE	*Acanthurus achilles*	Shaw, 1803
		Acanthurus guttatus	Forster, 1801
		Acanthurus lineatus	(Linnaeus, 1758)
		Acanthurus maculiceps	(Ahl, 1923)
		Acanthurus nigricans	(Linnaeus, 1758)
		Acanthurus nigrofuscus	(Forsskål, 1775)
		Acanthurus nigroris	Valenciennes, 1835
		Acanthurus olivaceus	Bloch & Schneider, 1801
		Acanthurus triostegus	(Linnaeus, 1758)
		Ctenochaetus striatus	(Quoy & Gaimard, 1825)
		Naso literatus	Forster, 1801
		Naso tuberosus	Lacépède, 1802
		Naso unicornis	(Forsskål, 1775)
		Zebrasoma scopas	(Cuvier, 1829)
		Zebrasoma veliferum	(Bloch, 1797)
	SOLEIDAE	*Pardachirus pavoninus*	(Lacépède, 1802)
	ZANCLIDAE	*Zanclus cornutus*	(Linnaeus, 1758)

Class	Family	Genus Species	Author Date
OSTEICHTHYES	BALISTIDAE	*Balistipus undulatus*	(Park, 1797)
		Psudobalistes flavimarginatus	(Rüppell, 1829)
		Rhinecanthus aculeatus	(Linnaeus, 1758)
		Rhinecanthus rectangulus	(Bloch & Schneider, 1801)
	MONOCANTHIDAE	*Oxymonocanthus longirostris*	(Bloch & Schneider, 1801)
		Pervagor janthinosoma	(Bleeker, 1854)
	OSTRACIONTIDAE	*Ostracion meleagris*	Shaw, 1796
	TETRADONTIDAE	*Arothron nigropunctatus*	(Bloch & Schneider, 1801)
		Canthagaster solandri	(Richardson, 1844)
	DIODONTIDAE	*Diodon literosus*	Shaw, 1804
	MUGILIDAE	*Moolgarda engeli*	(Bleeker, 1858)
	PINGUIPEDIDAE	*Parapercis clathrata*	Ogilby, 1911
	NEMIPTERIDAE	*Scolopsis trilineata*	Kner, 1868
	SIGANIDAE	*Siganus argenteus*	(Quoy & Gaimard, 1825)
		Siganus spinus	(Linnaeus, 1758)
	MALACANTHIDAE	*Malacanthus brevirostris*	(Guichenot, 1848)
	Total Fishes	118	