



**ASSESSMENT OF NONINDIGENOUS MARINE
SPECIES IN HARBORS AND ON NEARBY
CORAL REEFS ON KAUA'I, MOLOKA'I,
MAUI, AND HAWAI'I**

November 2004

COVER

Survey sites in 2002-2003 for the study at Nāwiliwili and Port Allen Kaua'i, Hale O Lono and Kaunakakai Moloka'i, Kahului and Ma'alaea, Maui, and Kawaihae and Hilo, Hawai'i. Approximate station locations indicated by red (harbors) and green (reefs) dots. Aerial images from the Benthic Habitat Mapping Main Hawaiian Islands website at <http://biogeo.nos.noaa.gov/projects/mapping/pacific/main8>.

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MAUI, AND HAWAI'I**

**S. L. Coles
P. R. Reath
K. Longenecker
Holly Bolick
L. G. Eldredge**

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EXECUTIVE SUMMARY

Collections and observations in 2002-2003 at harbor and nearby reef sites at Nāwilwili and Port Allen, Kaua'i; Hale O Lono and Kaunakakai, Moloka'i; Kahului and Ma'alaea, Maui; and Kawaihae and Hilo, Hawai'i recorded a total of 1039 taxa of marine algae, invertebrates, and fishes, 872 of which were identified to the species level. Of these 11 were new reports for Hawai'i and 112 were identified as introduced or cryptogenic species (NIS), for an overall NIS component of 10.9% of the total taxa recorded. Contrasting patterns were found between the distributions of the total identified taxa and NIS, with greater numbers of total taxa occurring at reef stations and greater numbers of NIS occurring in harbors, where they composed up to 36% of the total identified taxa. Occurrence and abundance of NIS decreased systematically from maxima in highly used commercial harbors which are isolated from oceanic circulation to relatively exposed small boat harbors to fully exposed reef sites. Only a few NIS that frequently occurred at harbor sites also occurred at reef sites. These results concur with previous studies in Hawai'i and the tropical Pacific that have indicated NIS to show maximum numbers in harbors and embayments with restricted oceanic circulation and few introduced or cryptogenic species to occur on coral reefs or other ocean exposed environments.

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I. INTRODUCTION

A. Nonindigenous marine species in Hawai'i and the Pacific

Introductions of nonindigenous species or exotic species invasions, largely resulting from shipping activities, into harbors, ports, and other coastal ecosystems, have been apparently been escalating around the world for the last 30 years, sometimes with serious negative consequences (Bax et al. 2001, Carlton 1985, Carlton and Geller 1993, Ruiz et al. 1997, Ruiz et al. 2000). Particularly prominent among invasive marine introductions have been the European Green Crab *Carcinus maenas*, originally introduced to the North American Atlantic coast over 150 years ago (Jensen et al. 2002), but more recently having spread to the American Pacific coast (Cohen et al. 1995) and as far as Australia (Rodriguez et al. 1999); and the Asian Shore Crab *Hemigrapsus sanguineus*, which has moved in the opposite direction from the Pacific to the North American east coast (Casanova 1999, McDermott 1991). Both crabs are now competing on both coasts with native species and each other for food and space resources. Other well-known invasive species which have disrupted the ecology of invaded areas are the green alga *Caulerpa taxifolia* which has monopolized large areas of the Mediterranean Sea (Bellan-Santini et al. 1996, Bourdoursque et al. 1992, Ferrer et al. 1997) and recently been reported in California waters (Jousson et al. 2000, Kaiser 2000, Williams and Grosholz 2002) and Australia (Murphy and Schaffelke 2003, Wiedenmann et al. 2001); and the ctenophore *Mnemiopsis leidyi*, which has invaded the Black Sea and monopolized plankton resources that formerly supported major fisheries (Costello et al. 1999, Mutlu 1999, Shushknia et al. 1990). Recently, a potentially devastating introduction of the mussel *Mytilopsis sallei* was intercepted and eradicated in marinas near Darwin, Australia after it reached local high densities but had not spread to open water (Bax et al. 2002, Pyne 1999, Willan et al. 2000). This mussel is closely related to the infamous zebra mussel that infests the waterways of the central U.S. where it has monopolized food resources and created major economic losses (Nalepa and Schloesser 1993). Because of potential negative impacts, marine species' invasions have been ranked among the most serious potential perturbations of marine ecosystems (Carlton 1994).

Nonindigenous marine species introductions and their impacts on native populations in the Indo-Pacific and the Hawaiian Islands have been reviewed in Coles et al. (1999b, 2002a, 2002b) and Coles and Eldredge (2002). In summary, previous studies focused in the Hawaiian Islands (Coles et al. 1997, 1998, 1999a, 1999b, 2002a, 2002b, DeFelice et al. 1998, 2002), but have included surveys conducted at Johnston Atoll (Coles et al. 2001), Guam (Paulay et al. 2002), American Samoa (Coles et al. 2003), and at ports on the North Queensland, Australia coast (Hewitt et al. 1998, Hoedt et al. 2000, Hoedt et al. 2001). These studies have shown contrasting patterns between harbors and bays on O'ahu compared to Hawaiian coral reefs or harbors and reefs in more tropical areas in the Pacific. Substantial numbers of the total identified taxa in O'ahu harbors and Kane'ohe Bay are nonindigenous species, but these introduced organisms comprise only a minor portion of the total taxa on coral reef areas in the Hawaiian Islands (Coles et al. 2004), Johnston Atoll (Coles et al. 2001), or American Samoa (Coles et al. 2003). Moreover, with the important exception of introduced algae in Hawai'i (Smith et al. 2002) there have few

instances of nonindigenous marine species becoming invasive in these regions, i.e. proliferating and dominating habitats at the expense of native organisms and communities. This contrasts with numerous instances of invasive nonindigenous marine species in temperate latitudes (Carlton 1985; Carlton and Geller 1993; Ruiz et al. 1997; Bax et al. 2001) with serious negative impacts such as have occurred in San Francisco Bay (Carlton 1979, Carlton et al. 1990, Cohen and Carlton 1995, Cohen et al. 1995, Daehler and Strong 1996, Gosliner 1995, Greenberg et al. 1996, Mills and Sommer 1995).

Table 1 summarizes the results from previous surveys of nonindigenous marine species in the Hawaiian Islands and Johnston Atoll. Studies in Pearl Harbor and the five commercial harbors of south and west O‘ahu have shown harbor biota to routinely include approximately 100 nonindigenous or cryptogenic (neither demonstrably nonindigenous nor native) taxa, comprising 17 to 23% of the total numbers of taxa identified in each study. A similar number of 116 nonindigenous or cryptogenic species have been determined for Kāne‘ohe Bay, equaling an introduced component of around 14% of the total number of taxa. By contrast, the three surveys on ocean-exposed reefs around the island of Kaho‘olawe and Midway and Johnston Atolls by the same investigators found only 3 to 10 nonindigenous or cryptogenic species among 300 to >660 taxa identified, for an introduced species component of only about 1%.

Table 1. Numbers of marine nonindigenous (N), cryptogenic (C) and total species determined from Hawai‘i and Johnston Atoll.

<i>Location</i>	(N)	(C)	Total N + C	Total Taxa	% N + C	Source
<u>Hawaiian Islands</u>						
O‘ahu, Pearl Harbor	69	26	95	419	23.0	Coles et al 1997, 1999a
O‘ahu, South Shore						
Commercial Harbors	73	27	100	585	17.0	Coles et al 1999b
Kāne‘ohe Bay	82	34	116	617	14.5	Coles et al 2002a
Waikīkī	33	19	52	925	5.6	Coles et al 2002b
Kaho‘olawe	3	0	3	298	1.0	Coles et al. 1998
Midway	4	0	4	444	1.5	DeFelice et al. 1998
Johnston Atoll	5	5	10	668	1.5	Coles et al. 2001
French Frigate Shoals	2	0	2	617	0.3	DeFelice et al. 2002

The nonindigenous and cryptogenic taxa (collectively termed NIS) sighted or sampled on these six comprehensive studies included a variety of invertebrates ranging from 15 annelid taxa to 31 crustaceans, mostly amphipods. Most invertebrate NIS are filter-feeding, fouling organisms that are prone to vessel attachment and transport. They thrive in eutrophic and turbid harbors and embayments, and few have been detected on the exposed coral reefs that had been previously surveyed. However, Kāne‘ohe Bay, as a semi-enclosed, estuarine embayment, shows characteristics of both harbor and coral reef conditions, has a greater number of introduced species than the harbors, and is one of the areas in Hawaiian waters most impacted by alien

invasive algae (Rodgers and Cox 1999, Russell 1983, Russell 1992, Smith et al. 2002, Woo et al. 1999).

Elsewhere in the Hawaiian Islands no introduced algae or invertebrates were detected at seven reef locations around the island of Kaho'olawe (Coles et al. 1998), where the only nonindigenous organisms found were the three species of fishes intentionally introduced in the 1950s (Brock 1960, Randall 1987). Similarly, the only nonindigenous species found at Midway Atoll (DeFelice et al. 1998) were two bryozoans and the barnacle *Chthamalus proteus*, first reported in the Pacific on O'ahu in 1996 (Southward et al. 1998), and one introduced fish *Lutjanus kasmira*. Only two introduced invertebrates were recorded for a total of over 500 identified species at French Frigate Shoals from the 2000 NOWRAMP surveys of the Northwestern Hawaiian Islands (DeFelice et al. 2002).

A similar pattern of low incidence of introduced or cryptogenic species on coral reefs was found throughout the five most populated Hawaiian Island on surveys conducted in 2002-03 (Coles et al. 2004), which utilized rapid assessment surveys of visually identifiable macro-organisms. By contrast, in the studies in Table 1, comprehensive samples were collected and organisms were identified in the laboratory to the lowest practicable taxa, so the results were not strictly comparable to the rapid assessment findings. Nonetheless, Coles et al (2004) found similar low levels of introductions, with a total of 26 introduced or cryptogenic species out of 486 taxa identified for 41 coral reef sites, and maxima of only six NIS occurring on any reef surveyed. Analysis of these results indicated that for the few introduced species found, open ocean exposure was the primary factor limiting the occurrence of introduced species with a significant interaction between exposure and species richness in transition areas in semi-enclosed reef environments.

The available information indicating that few introduced invertebrate species occur on Hawaiian coral reefs has therefore been based on limited data, either from collections made on reefs remote from probable sources of NIS introduction (Table 1), or on rapid visual assessments throughout the main Hawaiian islands that may have missed smaller introduced species. No systematic invertebrate surveys have been conducted on coral reefs in Hawai'i near harbors other than in Kāne'ohe Bay and Waikīkī, and no study has compared the results obtained from rapid visual assessments with simultaneously obtained collections identified to species or to the lowest practicable taxa. The present study provided the opportunity to make such comparisons and to determine whether the relatively high levels of introductions obtained in O'ahu's harbors also pertain to harbors on the neighboring main Hawaiian Islands that do not directly receive international shipping traffic but may indirectly receive marine introductions through inter-island transshipment.

B. History and Site Descriptions

1. Kaua'i

a. Nāwiliwili Harbor

Nāwiliwili Harbor (Figure 1) is located on the southeast coast of Kaua'i adjacent to the confluence of Hule'ia River and Niumalu Stream. The mouth of these combined streams formed an inner basin to the harbor which has been enlarged and deepened by dredging, and the shoreline has been modified to hardened surfaces, either piers or rock-lined walls, on the east, north, and west sides of the main inner harbor basin. The harbor basin is 467 m wide by 590 m long and protected by a rock jetty on its east side and by a 136 m long breakwater to the southeast. The harbor is Kaua'i's principal port, was first proposed in 1912 (Kaua'i Chamber of Commerce Harbors Committee of Kaua'i 1924) and first officially opened to deep-draft ship traffic in 1930. In 1935 the breakwater was completed along the southeast side of the harbor and additional dredging done to increase harbor depth to 10.5 m. In 1960 the jetty that protects the harbor's east side was rehabilitated and the harbor's entrance was dredged to 12 m depth (USACOE 1973, Sunn Low Tom and Hara 1973a). Following planning studies in 1973 (USACOE 1973, Sunn Low Tom and Hara 1973b), a small boat harbor was dredged between the harbor and the mouth of the Hule'ia River, which provides a small boat launching ramp and docks for approximately 100 small craft.

Because of the relatively enclosed nature of the harbor's inner basin and the influence of river outflow, the water column is highly stratified, and net transport out of the harbor occurs mainly at the surface. The environmental conditions are estuarine, with surface salinity of about 13 ‰ at the mouth of the Hule'ia River and about 25 ‰ in the inner harbor (USACOE 1973). Sediment discharge from the combined river and stream flow occurs principally during intense rainfall, but a sand bar which formerly built up between floods and restricted the Hule'ia River entrance does not rebuild under present reduced wave conditions (USACOE 1973).

Presently there are four pier areas in Nāwiliwili Harbor, with three of them in use as docks. Pier 1, on the northeast side of the harbor basin, is used by Matson for overseas container shipment and for docking crane barges and by Hawaiian Cement to unload cement from O'ahu. Pier 2 at the central portion of the north side of the harbor is used for docking cruise ships, fuel barges, and sugar barges. Pier 3 on the west side of the harbor is the docking areas for inter-island cargo by Young Brothers, unloading liquid propane and as an auxiliary docking areas for cruise ships when Pier 2 is in use. Pier 0, along the harbor's east jetty, is presently used for storage of various materials and for recreational fishing but not as a docking area.

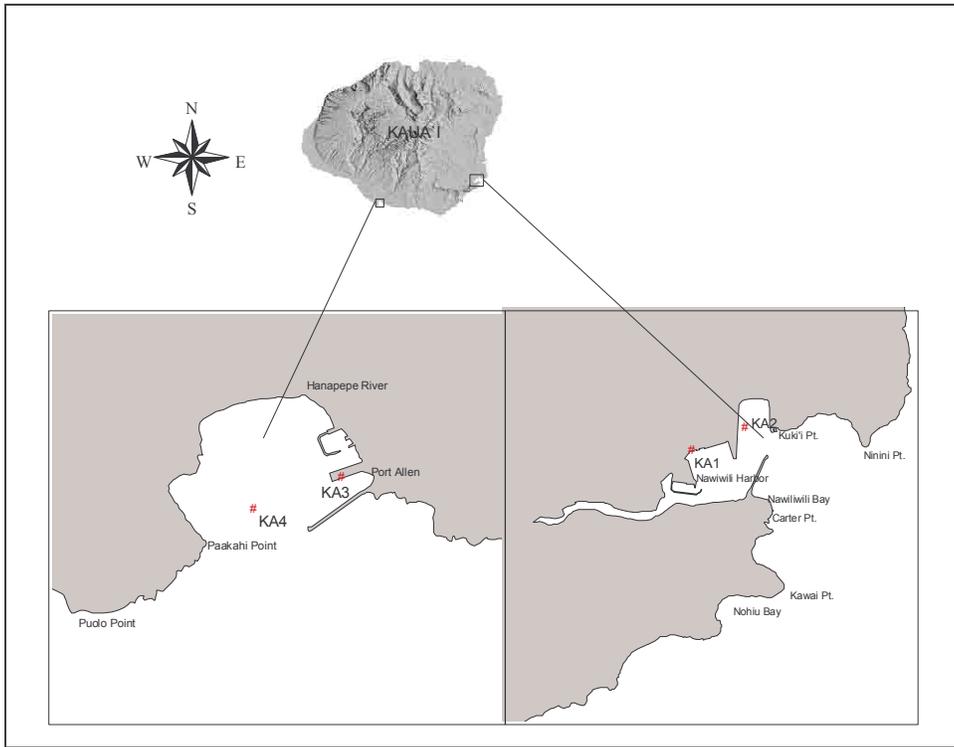


Figure 1. Stations sampled on Kaua'i.

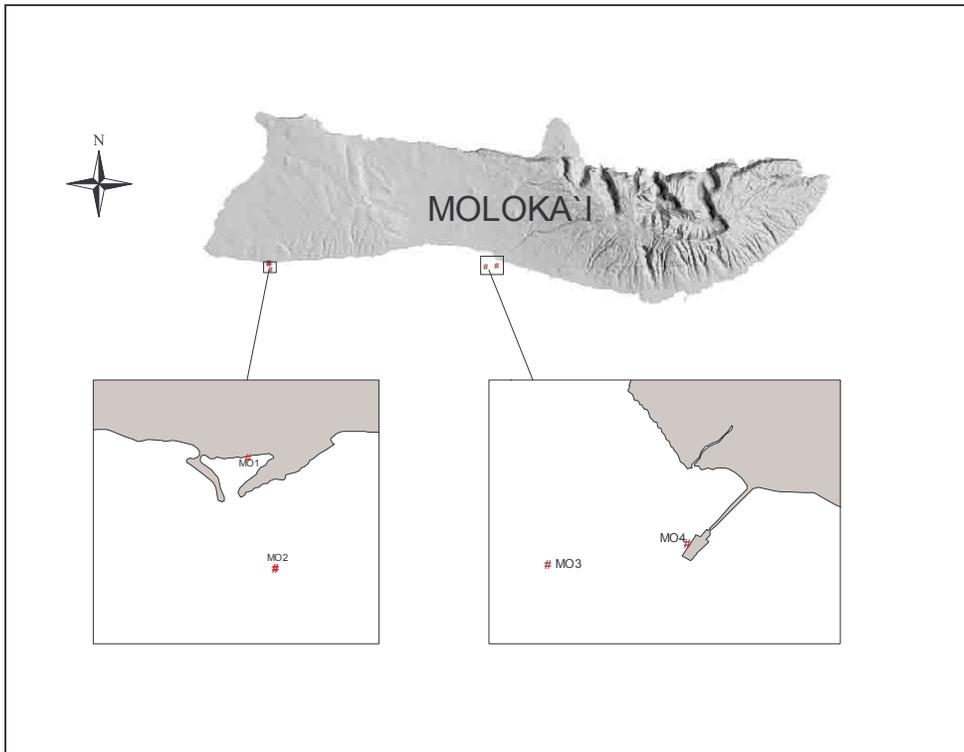


Figure 2. Stations sampled on Moloka'i.

b. Port Allen Harbor

Port Allen Harbor (Figure 1) is on the south coast of Kaua'i, just beyond the mouth of the Hanapēpē River. Port Allen is Kaua'i's second commercial harbor and was originally proposed to be the principal harbor for the island until estimates of construction costs and its distance from the island's population centers launched an evaluation of alternative sites (Kaua'i Chamber of Commerce, Harbors Committee of Kaua'i 1924). The site originally was the location of a 60 m long wooden pier built in 1899 west of Hanapēpē to load sugar and agricultural products, and in 1909 the port was renamed to honor Samuel Cresson Allen who invested to provide much of the money needed to improve it.

Construction of the harbor began in 1933 with a 364 m breakwater on the east side of the bay and dredging of a 333 X 454 m turning basin and 151 m long entrance channel. By 1939 the Port Allen pier was completed. Additional dredging of a 61 X 364 m basin was done on the north side of the harbor in 1945, and the slips on both sides of the main dock were re-dredged in 1951. However, in 1954 all sugar shipments from Port Allen ceased because centralized shipping procedures and reduced trucking costs diverted sugar loading and shipping to Nāwiliwili Harbor. Since that time the only harbor alteration at Port Allen was a maintenance dredging of the harbor south of the main dock to 10.5 m in 1991.

At present the Port Allen Harbor basin is 364 X 454 m in dimension and protected on the south by a rock jetty breakwater. The Port Allen small boat harbor lies to the north, between the main harbor and the mouth of the Hanapēpē River. Presently harbor facilities consist of two 182 m long piers on both sides of the main dock, with a depth of 7.5 m along the north pier and 10.5 m along the south pier. The north pier is used almost entirely to berth military vessels supplying the U.S. Navy Pacific Missile Base Facility (PMRF). The south pier has mixed uses, including offloading of fuel every other Friday and fertilizer twice a year. However, much greater use of the pier is made by tour operators to load and unload passengers to and from charter boats and large catamarans conducting tourist day-excursions for snorkeling and dolphin/whale watching off Kaua'i's leeward coast. Because of the need to separate passengers from fuel loading operations, charter boats must load passengers at the end of the north pier when fuel offloading is underway. This has prompted a demand for improved harbor infrastructure and possible development of capacity for docking of cruise ships in the future.

2. Moloka'i

a. Kaunakakai Harbor

Kaunakakai Harbor (Figure 2) is the only harbor used for shipping cargo to and from the island of Moloka'i. This harbor began as a channel and boat landing that was constructed prior to 1890 and consisted of two walls 4 m apart extending through the mud flats to deeper water offshore and an enlarged basin nearshore with room for two boats. Funds were requested in 1891 to construct a wooden roadway 393 m across the mudflats to a landing to accommodate two boats

offshore. By 1921 the Kaunakakai wharf consisted of a mole extending approximately 605 m from shore with a narrow gauge track on which freight and passengers were transported to the landing (Rush 1957).

The present entrance channel, harbor basin and pier for Kaunakakai Harbor were completed in 1934 (Roberts 2001, USACOE 1961). The present configuration consists of a dredged entrance channel 160 m wide and 7 m deep and basin 455 m long by 182 m wide and 7 m deep, connected to the shore by a causeway 160 m long (USACOE 1961, 1978). The causeway, which supports a two lane truck road on which all Moloka'i cargo is transported, has disrupted the long-shore flow of water from east to west on the reef flat, resulting in heavy deposition of sediments on the reef flat out to the reef crest (Roberts 2001). The south and west-facing pier and wharf are exposed to the open ocean, and vessels entering the harbor during intense prevailing winds and waves are subject to grounding on either side of the channel, and the harbor provides no protection to moored vessels. Flourishing coral reef areas occur in deeper water right outside the harbor to both the east and the west of the harbor entrance (Coles et al. 2004, Hawai'i Planning Design and Research 1978, Ziemann and Conquest 1992).

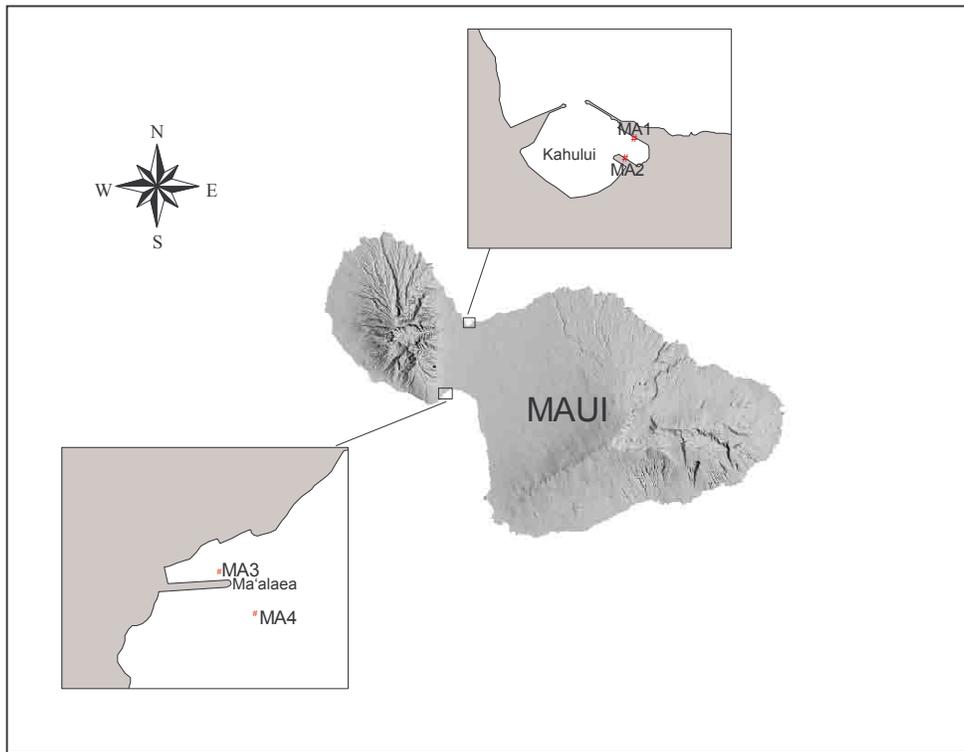
b. Hale O Lono Harbor

Hale O Lono Harbor (Figure 2) was constructed primarily for shipment of sand and cinders from West Moloka'i to O'ahu (USACOE 1961). It consists of an entrance channel enclosed by a basalt breakwater revetment that encloses the harbor and provides protection from open ocean conditions to the south. Presently, the harbor is only used by local fishermen and as a temporary docking site by sailing and fishing boats in transit to other islands.

3. Maui

a. Kahului Harbor

The predecessor to the present Kahului Harbor (Figure 3) was constructed in 1904 and consisted of two small docks located between the present Piers 1 and 2 that were used for landing freight that was transported to the docks from offshore lighters (Rush 1957). By 1910, the harbor had an 545 m long rubble mound breakwater on its east side, a turning basin and a second wharf, called the Claudine Wharf, was constructed at the present site of Pier 2 (Hawai'i Harbors Division 1976, Rush 1957). From 1910 to 1931 the east breakwater was extended to a length of 840 m, a west breakwater 706 m long was constructed, the turning basin enlarged to 606 m long by 440 m wide by 10.6 m deep, and the entrance channel dredged to 182 m wide and 10.6 m (USACOE 1980). In 1921-24 the first 150 m of Pier 1 was constructed and subsequently lengthened to 282 m and finally to its present length of 337 m. In 1929 Claudine Wharf was modified to become Pier 2 and incrementally lengthened to its present 271 m (Hawai'i Harbors Division 1976)



3. Stations sampled on Maui.

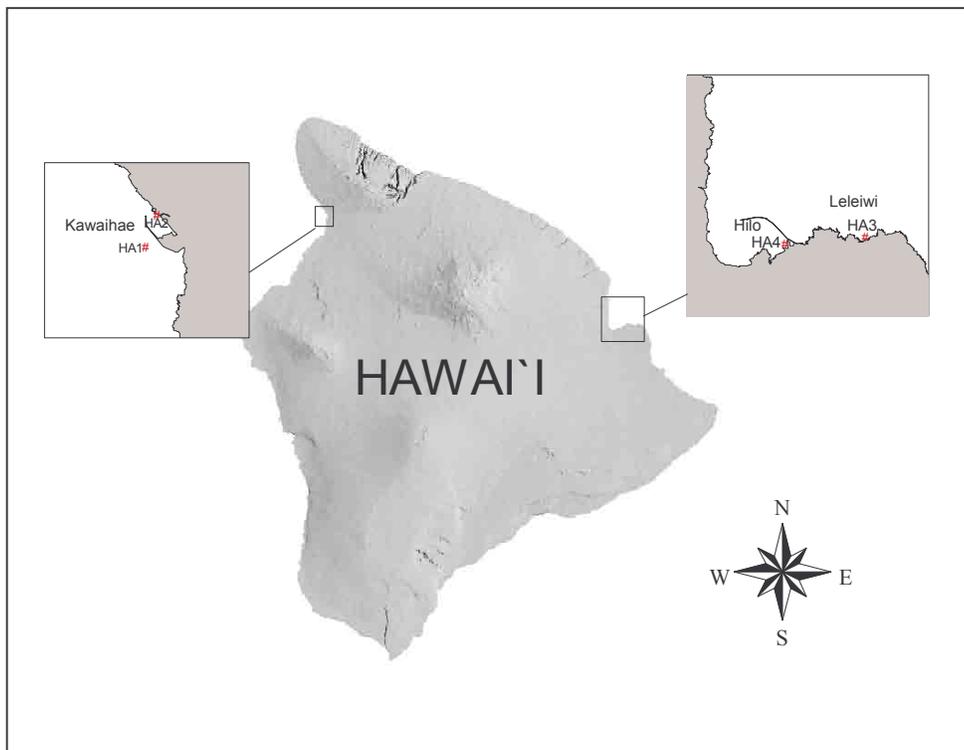


Figure 4. Stations sampled on Hawai'i.

Additional dredging was completed in 1962 that enlarged the harbor to its present dimensions of 727 by 621 m. Although the lengths of the east and west breakwaters are essentially unchanged since 1931, they have been repeatedly repaired and modified due to the heavy wave turbulence at this exposed north shore location where winter storm waves can reach breaking heights of more than 10 m at the toe of the breakwaters (Sullivan 1979). The initial rubble mound breakwaters were constructed of heavy basalt boulders, but after frequent required repairs for severe damage in 1954 various other armoring materials such as tetrapods, tribars, and dolos have been utilized to stabilize the breakwater jetties (Sullivan 1979)).

Kahului Harbor is Maui's only deepwater port and therefore the entry point for ocean shipping to the second most populous of the Hawaiian Islands. Pier 1, on the northeast side of the port, is utilized by overseas freighters, tankers, and container ships and receives all bulk and general cargo reaching Maui. Pier 2 is parallel and approximately 240 southwest of Pier 1. It serves primarily inter-island barges and commercial fishing vessels. Cement and petroleum products are also handled at this pier (Hawai'i Harbors Division, 1976).

b. Ma'alaea Harbor

Ma'alaea Harbor (Figure 3) was first constructed on a large fringing reef flat at the western corner of Ma'alaea Bay in 1952 and modified in 1955, 1959, and 1979. The harbor is the only public access point to Ma'alaea Bay from its western end. It consists of a 335 m breakwater revetment along the south side and 260 long breakwater on the east of the harbor basin. A 27 m wide by 4 m deep channel provides entrance to the harbor from the south between the south mole and the east breakwater. The harbor area is approximately 4.6 hectares in area with a design depth of approximately 4 m, and the harbor is used exclusively by recreational boaters, fishermen, and small sailing craft with shallow drafts. A public boat-launching ramp is located at the head of the harbor (U.S. Fish and Wildlife Service 1993, USACOE 1980).

Despite the protection provided by the south and east breakwaters, the harbor is subject to severe surge when wave heights at the entrance exceed about 1.8 m, which occurs up to 20 days of the year. Surge problems at these times limit both berthing capacity within the harbor and navigating the entrance channel. Ma'alaea Bay has long been noted for its murkiness and fine sediments (Butler 1975), and the three upland storm water drainage channels empty into the northern side of the harbor basin, resulting in nearly continuous flushing of suspended sediments into the harbor during rainy periods. The harbor therefore acts somewhat as a sediment trap with fine sediments regularly resuspended by boat traffic (U.S. Fish and Wildlife Service, 1993)

4. Hawai'i

a. Kawaihae Harbor

Three vessel landings originally existed in the vicinity of Kawaihae to provide access for general cargo and cattle shipment (Rush 1957). Later facilities consisted of a small boat harbor and wharf, and the present Kawaihae Harbor was constructed by dredging out a portion of the coral reef offshore of Kawaihae and depositing a basalt boulder revetment on the harbor's seaward west and northwest boundaries. The present deep draft harbor at Kawaihae (Figure 4) was completed in 1973 to provide commercial cargo handling facilities for the rapidly growing leeward coast of the island of Hawai'i. It consists of a curved 803 m long rubble mound breakwater enclosing a basin 440 m wide by 530 m long on the the northeast side and 318 m on the seaward southwest side. The 150 m wide entrance channel is 12 m deep and the design depth of the harbor basin is 10.6 m (Hawai'i Harbors Division 1989). A small craft harbor was later constructed on the south side of the main harbor's jetty (Ocean Research Consulting and Analysis 1981).

Shipping related activity in the harbor is restricted to the inter-island barge terminal and piers along the harbor's northeast side that is used to service general cargo, container barges, and petroleum vessels. Along with these commercial port operations, the harbor is also used for a number of other water-related activities, including mooring of fishing and sailing boats along the east side of the harbor, a public boat launching ramp adjacent to the harbor entrance, and canoe racing practice within the calm water of the harbor. The eastern side of the harbor is a wide beach shoreline formed by the tailings from the dredging of the harbor from the original coral reef, and the public uses this area for beach-related activities. Water quality and clarity in the harbor is high due to its proximity to and exchange with open ocean water through the wide entrance channel, but this also results in wave turbulence from northwest, west and south Pacific swells that have caused delays in dockings of vessel and inter-island barges (Hawai'i Harbors Division 1989)

b. Hilo Harbor

The first facility for landing passengers and cargo in Hilo Bay was a wharf built in 1908 by Hilo Consolidated Railway Company near the mouth of the Wailoa River at Waieka. This was unsuitable for freight transport since all freight had to be lightered to vessels in Hilo Bay (Rush 1957). The beginnings of the present configuration of Hilo Harbor (Figure 4) date to the start of the Hilo breakwater construction, also in 1908. Originally built of stone quarried from Waiakea and Puna and later from Waipio Valley, the breakwater was constructed on the inner part of the reef fronting Hilo Bay and was completed in 1929 to its present length of 3055 m (Kelly et al. 1981). During that time the pier that was originally called Kuhio Wharf was constructed in 1912-16 at the present Pier 1 site, and the harbor bottom near the pier was dredged to a depth of 10.6 m. Completion of this pier removed most ship loading and unloading activity from the Railroad Pier and the Government Wharf near the mouth of Wailoa River. Pier 2 was constructed in 1921-

23 and Pier 3 in 1926-27, and large areas of the harbor basin were dredged during this period to accommodate approach to these piers (Rush 1957, Kelley et al. 1981).

Hilo Bay, originally totally exposed to tradewind, storm and long period Pacific swells as well as intense tsunami waves, is partially protected by the 3055 m long breakwater that projects 3.3 m above water. Sixty percent of the breakwater was seriously damaged by the 1946 tsunami but was repaired by 1948, with further breakwater repairs in 1968, 1975, and 1981. Within the breakwater the 424 by 697 m Hilo Harbor basin has been dredged to 10.6-12.1 m depth and is the site for Piers 1, 2 and 3, which handle all the cargo for Hilo and nearby localities on the island of Hawai'i. Pier 1 is the oldest and largest pier and extends northward toward the Hilo Bay jetty from Kalaniana'ole Avenue. An adjacent jetty which projects at a right angle westward from the base of Pier 1 is the site of Pier 2 on the jetty's north side and Pier 3 on its southwest side. (Hawai'i Harbors Division 1988, USACOE 1983). Water quality within Hilo Bay and Harbor are poor and usually turbid, and the bay and harbor have historically been subject to a variety of land based pollution sources (Neighbor Island Consultants 1973)

II. METHODS

A. Literature Search

A variety of sources of information on the environmental conditions and biological communities of the neighbor islands were examined for this study. Literature consulted included published papers in the open scientific literature, taxonomy-based monographs and books, unpublished reports for environmental studies in the harbors, and newspaper and magazine articles that were concerned with the development or environmental and biological communities of the harbors. Resources that were consulted in this search were the libraries of Bishop Museum, the University of Hawaii, Mānoa, and AECOS Inc.

B. Bishop Museum Collections

Bishop Museum databases for the marine algae, invertebrates, malacology and ichthyology collections were reviewed for marine or estuarine organisms collected from the harbors and reef areas in the vicinities of Nāwiliwili and Port Allen, Kaua'i; Kaunakakai and Hale O Lono, Moloka'i; Kahului Harbor and Ma'alea, Maui; and Kawaihae and Hilo Harbor, Hawai'i. The retrieved data were assembled into a combined database containing taxa identity, taxonomic authority, collection location and date, collector, and collector's notes, when available. This information is included with the general listing of all taxa for the study developed from all sources, including the present study, in Appendix A.

C. Field Surveys

Samples were collected and on-site observations made at Pier 1 in Nāwiliwili Harbor and a reef just outside the Nāwiliwili Breakwater (Marriott Hotel Reef), from the main pier, and a reef within the harbor breakwater at Port Allen Harbor, Kaua'i (Figure 1); the main piers and nearby reefs at Kaunakakai and Hale O Lono Harbors, Moloka'i, (Figure 2); Piers 1 and 2 at Kahului Harbor and within the small boat harbor and a reef outside the harbor breakwater at Ma'alea, Maui (Figure 3); at the main and a reef outside Kawaihae Harbor, at Pier 1 in Hilo Harbor and at a reef at Lelewi, Hawai'i (Figure 4). Sampling station locations, dates, coordinates and depths are summarized in Table 2.

Collections and observations were made by two experienced investigators sampling as large a variety of habitats as possible at each site while using scuba. One diver (SLC) recorded the identifiable invertebrate macrofauna and macroalgae and all fishes swimming in the area, A second diver (PRR) sampled organisms from hard surfaces and sediments from the intertidal zone to the base of the reef or from pier pilings and other hard surfaces in the harbors. Invertebrate macro-organisms were collected by hand, and hard surfaces were scraped with a chisel into collecting bags and transported back to the laboratory. Macroalgae samples were collected and frozen until later identification, and epiphytic organisms were rinsed from other algae samples and preserved in 70% ethanol for further processing. Collected organisms and substrata were inspected shortly after collection, and taxa requiring relaxation (i.e. hydroids,

Table 2. Sampling dates, locations, and depths for harbor stations on Kaua'i, Moloka'i, Maui, and Hawai'i.

Island	Station	Location	Date	Latitude N			Longitude W			Depth (m)
				Deg	Min	Sec	Deg	Min	Sec	
Kaua'i	KA1	Nāwiliwili Harbor	11-Nov-02	21	57	26.1	159	21	39.7	+0.3-10
	KA2	Marriott Hotel Reef	11-Nov-02	21	57	36.3	159	21	14.6	2.5-6
	KA3	Port Allen Harbor	13-Nov-02	21	54	9.9	159	25	31.3	+0.3-10
	KA4	Port Allen Reef	13-Nov-02	21	54	3.5	159	35	49.5	7.5-10.5
Moloka'i	MO1a	Hale O Lono Harbor Main Dock and Jetty	28-Jan-03	21	5	23.7	157	15	4	0-5
	MO2	Hale O Lono Reef	28-Jan-03	21	5	1.4	157	14	57.7	9-12
	MO3	Kaunakakai Reef	30-Jan-03	21	4	59.6	157	2	34.9	7-10
	MO4	Kaunakakai Main Dock	30-Jan-03	21	5	5.0	157	1	54	0-7
Maui	MA1	Kahului Harbor Pier 1	31-Mar-03	20	54	0.5	156	28	9.8	0-9
	MA2	Kahului Harbor Pier 2	31-Mar-03	20	53	53.5	156	28	13.2	0-6.5
	MA3	Ma`alaea Reef	2-Apr-03	20	47	31.6	156	30	45.8	5.5-7.5
	MA4	Ma`alaea Harbor	2-Apr-03	20	47	37.5	156	30	50.9	0-4.5
Hawai'i	HA1	Kawaihae Reef	23-Jun-03	20	1	55.5	155	50	9.4	4-9
	HA2	Kawaihae Harbor	23-Jun-03	20	2	25.5	155	49	58.9	0-7.5
	HA3	Lelewi Bay	28-Jun-03	19	44	14.4	155	1	16.5	6-15
	HA4	Hilo Harbor	28-Jun-03	19	44	5	155	3	25.1	0-9

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% ethanol. Coral rubble was broken into small pieces of ca. 5-20 cm approximate diameter and treated in 5% formalin for 12 hours, the residue was washed through a 0.5 mm screen to remove small invertebrates, and these were transferred to 70% ethanol for shipment to Bishop Museum.

Collected specimens were sorted into major taxonomic groups identified under dissecting microscope magnification to species or the lowest practicable taxa. Identifications were made using descriptions available in Reef and Shore Fauna of Hawai'i Sections 1 to 4 (published), 5 and 6 (unpublished), various taxonomic references, and voucher specimens in the Bishop Museum collections. Where needed, specimens from various groups were sent to taxonomic experts (see Acknowledgments) for final identification. Identified organisms were assigned native, nonindigenous, or cryptogenic status based on Carlton and Eldredge (in prep.) or, for newly reported species for Hawai'i in consultation with taxonomic experts based on biogeographic distributions.

D. Data Analysis

The Sorenson's Index of percent similarity, based on presence-absence of species at station pairs, was used to measure the degree of association among stations. By this index, the more species two stations share relative to total species composition, the greater their ecological similarity. Based on a matrix of Sorensen Index values, cluster analysis was used to arrange stations into groups or clusters. Intercluster distances were calculated using an unweighted pair group average method (Kovach 2002). 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 Location and Descriptions

1. Kaua'i

Station KA1. Nāwiliwili Main Dock 11-Nov-02 (Latitude 21°57'26.1"N, Longitude 159°21'39.7"W). Concrete pier pilings in 10 m depth and fine clay sediment bottom with intermittent coral mounds. Biota mostly consisted of fouling dominated by sponges and the bryozoan *Amathia distans*, with a few species of reef fish. Water turbid with visibility of ca. 6 m.

Station KA2. Marriott Hotel Reef. 11-Nov-02 (Latitude 21°57'36.3"N, Longitude 159°21'14.6"W). 100 m east of jetty that forms east side of Nāwiliwili docking area. Substratum consisted of wave-disturbed reef with little relief and moderate patchy coral cover, mostly of *Porites lobata* and *Pocillopora meandrina*, and abundant algae in 2.5 to 5 m depth. Deeper areas >5 m along western side have higher relief, with ledges and grooves providing habitat for diverse fishes and coral cover of ca 50%. High exposure to tradewind generated waves caused limited visibility of around 5 m.

Station KA3. Port Allen Main Dock. 13-Nov-02. (Latitude 21°54'9.9"N, Longitude 159°35'31.3"W). Concrete pilings in 10 m depth and fine loose clay sediment bottom with very abundant burrow openings, probably of the alpheid *Alpheus mackayi*. Pilings supported numerous large, plate colonies of the reef corals *Montipora capitata* and *Pavona maldivensis* and abundant large colonies of the introduced octocoral *Carijoa riisei*., along with a variety of sponges and *Amathia distans*. Visibility was limited to ca. 3-4 m by turbid conditions.

Station KA4. Port Allen Harbor Entrance. 13-Nov-02. (Latitude 21°54'3.5"N, Longitude 159°35'49.9"W).

Limestone substratum located at the base of a reef just inside of the harbor entrance ranging from 7.5-10.5 m depth reef base in to top of reef in ca. 5 m. Bottom is mostly loosely consolidated cobble to boulder-size coral rubble surrounded by sand/cobble substratum. A thin

coating of fine sand/silt covered all surfaces, and hard surfaces were dominated by an abundant growth of *Sargassum* cf. *echinocarpum* algae. Coral coverage was low, ca. 1-5% with a few large colonies of *Porites lobata*. In shallower areas <5 m depth coral cover was higher at around 25% and less sediment. Turbulent conditions and sediment-laden water from Hanapepe stream cause low visibility of ca. 5 m.

2. Moloka'i

Station MO1. Hale O Lono Small Boat Harbor 28-Jan-03 (Latitude 21°05'23.7"N, Longitude 157°15'04.0"W).

Small harbor enclosed by massive basalt boulders that provide all of substratum to 10 m depth except for small wooded docks and pilings. Access provided to harbor through narrow (ca. 15 m wide) channel. The harbor is somewhat exposed to open ocean conditions, and *Porites lobata* and *Pocillopora meandrina* colonies are relatively abundant on the basalt boulders, and a variety of reef fishes were present.

Station MO2. Hale O Lono Reef 28-Jan-03 (Latitude 21°05'1.4"N, Longitude 157°14'57.7"W).

Foreereef directly outside of Hale O Lono Harbor with high coral cover of 60-80% mainly composed of *Porites lobata* and *Montipora capitata*. Little vertical relief except along the edges of sand-filled channels extending ca. 2 m below reef. Substratum mostly consolidated limestone without much loose rubble. Abundant *Asparogopsis taxiformis* observed in one small area and many introduced *Cephalopholis argus* were observed primarily along the edges of sand patches and along channels where the greatest relief occurred.

Station MO3. Kaunakakai Reef. 30-Jan-03 (Latitude 21°04'59.6"N, Longitude 157°02'34.9"W).

Foreereef on western side of channel to Kaunakakai Harbor. Coral cover lush and abundant at ca. 80% coverage and mainly composed of stands of *Porites compressa*, *Porites lobata*, and *Montipora capitata*. Relief was generally low except for 2-3 m deep channels, usually more than 5 m wide with sandy bottoms and some rubble. This was the only site where the Hawaiian endemic soft coral *Sinularia molokensis* was found, in two medium sized patches.

Station MO4. Kaunakakai Harbor Main Dock. 30-Jan-03 (Latitude 21°04'5.0"N Longitude 157°01'54.0"W).

Main pier along the southeast side of the harbor channel near its entrance. Substratum is concrete pier pilings to 10 m depth and face of dock, with both showing moderate coverage of fouling organisms, with reef corals becoming more abundant toward the seaward end of the pier. Site is relatively exposed to open ocean circulation and clear oceanic water, but still supports common harbor biota.

3. Maui

Station MA1 Kahului Harbor, Pier 1. 31-Mar-03 ((Latitude 20°54'0.5"N, Longitude 156°26'9.8"W). Heavily fouled concrete pilings along northeast side of the harbor in ca. 10 m depth and soft mud bottom. High turbidity with visibility of ca. 2 m at depths above 2 m and visibility very low below 3 m depth, which limited sighting of fishes and other motile organisms.

Station MA2 Kahului Harbor, Pier 2. 31-Mar-03 ((Latitude 20°53'53.5"N, Longitude 156°28'13.2"W).

Docking area for inter-island shipping on southwest side of harbor basin across from Pier 1. Similar habitat, substratum and conditions as at Pier 1, except even higher turbidity and lower visibility of ca 1.5 m below 2 m depth.

Station MA3. Ma`alaea Reef 2-Apr-03. (Latitude 20°47'31.6"N, Longitude 156°30'45.8"W). Degraded and disturbed reef near Ma`alaea Harbor entrance dominated by macroalgae, especially very abundant introduced *Acanthophora spicifera*. Reef highly impacted by south swells and sediment scour and deposition, with low coral coverage of ca 10%, mostly *Pocillopora meandrina* and *Porites lobata*.

Station MA4. Ma`alaea Small Boat Harbor 2-Apr-03. (Latitude 20°47'37.5"N, Longitude 156°30'50.9"W).

The harbor is enclosed by large boulders, and the site was along the south side of the harbor in 1-5 m depth near the DLNR office, where a large stand of the invasive octocoral *Carijoa riisei* was noted. The substratum is basalt boulders and cobble-sized rubble with algae and fine sediment cover and metal sheet piling or concrete walls. Turbidity was moderate with visibility of 3-4 m.

4. Hawai'i

Station HA1. Kawaihae Reef. 23-Jun-03. (Latitude 20°01'55.5"N, Longitude 155°50'09.4"W)

Flourishing reef with well developed spur and groove system just seaward of Kawaihae Harbor breakwater. High coral coverage of ca. 65-75% dominated by *Porites lobata*, *Porites evermanni* and *Porites compressa*, with abundant and diverse fish and few macroalgae.

Station HA2. Kawaihae Harbor Main Dock. 23-Jun-03. (Latitude 20°02'25.5"N, Longitude 155°49'058.9"W).

The harbor is semi-enclosed with a wide channel opening to the northwest, which exposes it to wave disturbance during winter northwest swells, and water clarity in the harbor is similar to open ocean conditions, promoting a high coverage of reef corals and associated biota. The coral reef environment ends abruptly at the west end of the harbor main pier, and the bottom substratum is coarse sand and coral rubble coverage with filamentous brown algae and silt, extending from depths of about 7 m right by the pier to the harbor depth of 11 m. Little live coral or other macrobiota occurs on the bottom, but coral coverage is high on the metal sheet piling that forms the harbor wall along the pier. The substratum sampled was the main pier wall and pier pilings

along the northeast side of the harbor down to 6 m depth, and the relatively flat bottom consisting of coarse to medium sand and pebble size coral rubble.

Station HA3. Leleiwi Bay. 28-Jun-03. (Latitude 19°44'14.3"N, Longitude 155°01'16.5"W).

The site was an oceanic coral reef in excellent condition, just offshore of Leleiwi Beach Park with Intermediate coral coverage of ca 50%, with high diversity and abundant fish over a reef extending 6.5 to 10 m in depth.

Station HA4. Hilo Harbor Pier 1. 28-Jun-03. (Latitude 19°44'0.5"N, Longitude 155°03'25.9"W).

Hilo Harbor is semi-enclosed and protected by the Hilo breakwater, and Pier 1 projects into the harbor from its western side where water conditions are isolated from open ocean influence and therefore stagnant and turbid. Sampling and observations were from moderately fouled pier pilings that extend to ca 10 m depth to a silt-clay bottom, and visibility was low, ca, 4 m.

B. Benthos and Fish Surveys

A total of 1029 taxa with 872 named species were collected or observed at the 16 harbor or reef stations on Kaua'i, Moloka'i, Maui, or Hawai'i (Table 3, Appendix A). By comparison, 935 taxa with 753 named species had previously been reported in these areas in published or in unpublished literature or in Bishop Museum collections, with the earliest dating to 1902 at Kahului Harbor (Appendix A). Of the 1029 taxa of the present study, 649 taxa with 521 named species were new reports for the sites overall, with the maximum number of new reports occurring at Station MO1 (Hale O Lono Harbor) where no previous collections or observations had been made. Overall, 47% of the named species previously observed or collected were found in the present study, with percentages of species re-collected at specific sites ranging 13-98% for those areas where previous information is available.

The distribution of taxa for major taxonomic groups among the 16 stations on the four islands is shown in Table 4, and the distribution for total taxa is shown in Figure 5. For both total taxa and those taxonomic groups having higher numbers of taxa, there is a general pattern of more taxa occurring at reef stations compared to nearby harbor stations, with the maximum number occurring at Station MA3 (Ma'alaea Reef) and the fewest at Station MA 2 (Kahului Harbor Pier 2). The exception to this pattern was at Station MO1 (Hale O Lono Harbor), which had 32 more taxa than the nearby Station MO2 (Hale O Lono Reef). This harbor is small, relatively open to the open ocean, support abundant coral reef biota, and therefore are distinctly different in its environmental characteristics from large, enclosed commercial harbors such as Nāwiliwili, Kahului, and Hilo.

Sorensen's similarity analysis of presence-absence of taxa at all stations further demonstrates the differences between harbor and nearby reef stations for total taxa observed or collected. The dendrogram summarizing the percent similarities among the 16 stations (Figure 6) indicates three principal station clusters with two of these each containing two subclusters, all of which can be

Table 3. Numbers of taxa and named species previously reported for neighbor island harbor and reef sites surveyed in the present study.

Station	All											
	All Taxa Pres. Study	Previous Taxa	Taxa in Common	Taxa in Common	Prev. Taxa Not Found	% Taxa Recollected	New* Taxa	Named Species Pres. Study	Named Species Prev. Studies	Named Species in Common	Named Species Not Found	% Named Species Recollected
KA1	235	302	77	225	25%	158	190	272	71	201	26%	119
KA2	210	123	42	81	34%	168	170	111	37	74	33%	133
KA3	218	172	70	102	41%	148	193	146	68	78	47%	125
KA4	128	302	35	267	12%	93	101	235	30	205	13%	71
MO1	157	193	66	127	34%	91	123	157	53	104	34%	70
MO2	251	56	49	7	88%	202	216	53	48	5	91%	168
MO3	184	239	54	185	23%	130	152	218	48	170	22%	104
MO4	219	63	62	1	98%	157	189	62	61	1	98%	128
MA1	152	94	23	71	24%	129	118	69	18	51	26%	100
MA2	121	0	0	0	0%	121	104	0	0	0	0%	104
MA3	304	326	88	238	27%	216	269	279	80	199	29%	189
MA4	226	43	34	9	79%	192	194	35	27	8	77%	167
HA1	236	0	0	0	0%	236	203	0	0	0	0%	203
HA2	204	42	26	16	62%	178	187	39	26	13	67%	161
HA3	247	106	65	41	61%	182	212	101	62	39	61%	150
HA4	182	0	0	0	0%	182	147	0	0	0	0%	147
TOTAL	1069	935	420	515	45%	649	872	753	351	402	47%	521

**New " = new record for Hawaii'i

Table 4. Distribution of major taxonomic groups and total taxa among neighbor island stations.

Taxa	Station															
	KA1	KA2	KA3	KA4	MO1	MO2	MO3	MO4	MA1	MA2	MA3	MA4	HA1	HA2	HA3	HA4
Cyanophyta		1	1	1			1						2			
Chlorophyta		5	2	1	9	5	4	2	1		8	3	3		3	1
Phaeophyta		1	1	1	6		1	1			3		2		1	
Rhodophyta	2	17	1	2	23	16	23	1			31	12	28		5	1
Porifera	14	9	12	5	4	4	3	11	8	5	8	7	4	18	2	12
Cnidaria	8	18	12	14	13	13	16	17	6	4	9	13	18	11	14	8
Polychaeta	36	32	22	19	33	17	22	22	39	31	34	39	29	31	20	27
Gastropoda	16	46	21	52	35	37	54	23	13	11	71	40	44	45	58	11
Nudibranchia	4	1	3	1	1	1		2	3		2	1		3		
Bivalvia	14	14	16	16	17	5	13	15	15	11	27	17	8	15	11	5
Crustacea	30	64	54	42	43	46	52	55	38	42	77	56	51	50	44	36
Ectoprocta	10	4	12	9	13	13	7	12	14	7	5	12	5	5	6	9
Echinodermata	2	8	9	14	5	4	9	6			8	4	7	4	7	1
Asciacea	9	6	5	5	5	1	2	3	10	9	4	5	1	5	1	5
Other Invertebrates	3	1		2	2		1	1	1	1	2	1		1	1	1
Osteichthyes	9	24	13	35	27	42	39	11	4		15	16	32	22	43	11
Reptilia													1		1	
All Taxa	157	251	184	219	236	204	247	182	152	121	304	226	235	210	217	128

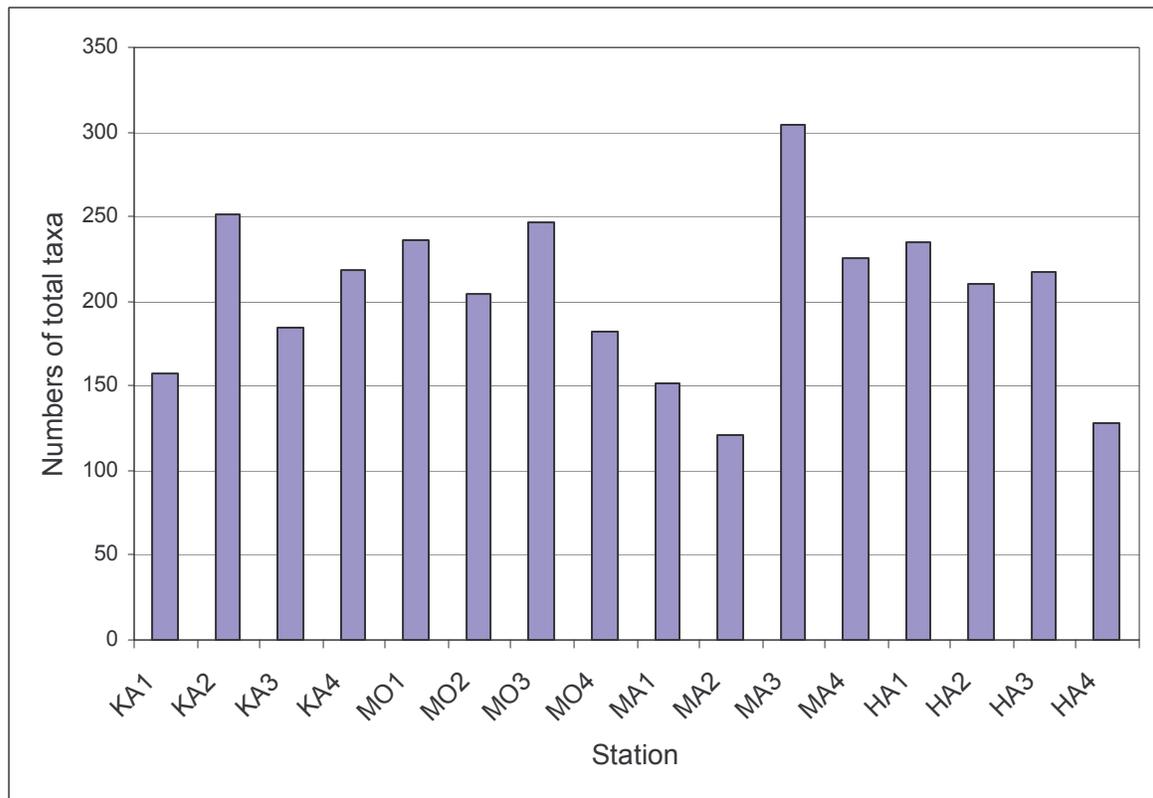


Figure 5. Distribution of total taxa among neighbor island stations.

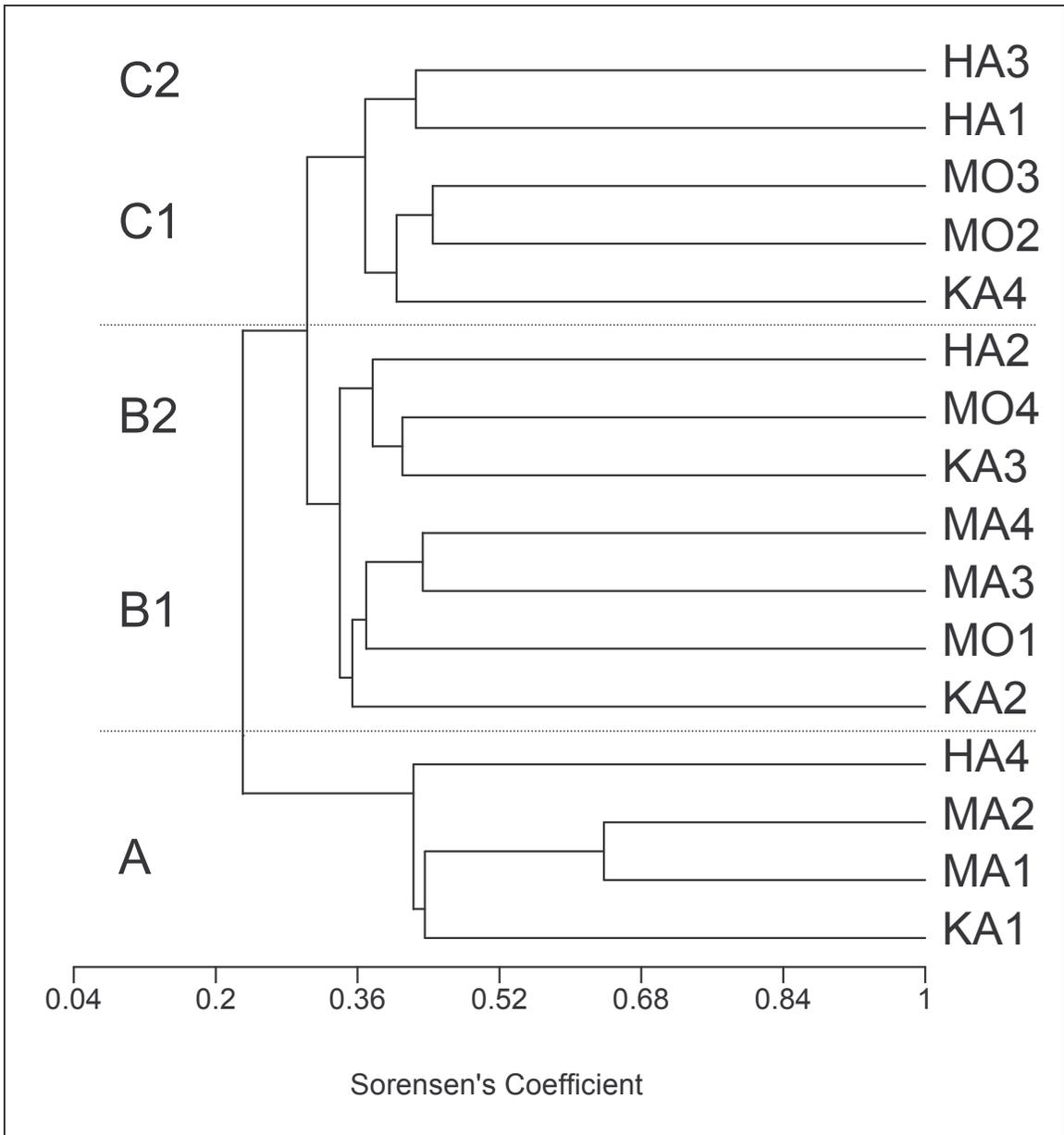


Figure 6. Dendrogram of similarity analysis for total taxa at neighbor island harbor and reef stations.

related to environmental characteristics at the station sites. Cluster A is composed of the four stations that were the most enclosed commercial harbor sites, i.e. Nāwiliwili Harbor, the two Kahului Harbor stations and Hilo Harbor. Cluster B is composed of two subclusters: B1 has two relatively ocean-exposed small boat harbors at Ma'ālaea and Hale O Lono, and two reef sites just outside harbors, Marriott Reef, and Ma'ālaea Reef. Cluster B2 is three sites in medium-sized harbors semi-exposed to oceanic conditions at Port Allen, Kaunakakai, and Kawaihae. Cluster C is all reef sites, with C1 composed of 1 station on Kaua'i and two on Moloka'i, and C2 of the two reef stations on Hawai'i. It is significant that the relationships shown are more related to the similarity among the environmental conditions at the sites rather than their to island locations, indicating that the biotic community is continuous throughout the main Hawaiian Islands and that local factors determine the composition of the resulting assemblages of organisms.

C. Introduced and cryptogenic species

Of the 1029 taxa and 872 named species found at the 16 stations, 112 were considered to be introduced (73) or cryptogenic (38), for an overall NIS component of 10.9% of the total taxa identified for the study (Table 5). Table 6 and Figure 7 show the distribution of the NIS among the stations by major taxonomic group and total taxa, and the percentage of the total taxa that were NIS. The taxonomic groups showing the greatest numbers of NIS were Porifera, Hydrozoa, Polychaeta, Pericarida (amphipods, isopods and tanaids), Ectoprocta, and Acidiacea, with 10, 12, 18, 16, 12, and 14 NIS species respectively. NIS showed that both the greatest numbers (44-52) and the greatest percentages of total taxa (31-36%) at the stations in the large commercial harbors, with the maxima occurring in Kahului Harbor, followed by Nāwiliwili and Hilo Harbors. Intermediate values occurred in the smaller, more ocean exposed harbors at Port Allen, Hale O Lono, Kaunakakai, Ma'ālaea, and Kawaihae, where NIS ranged 22-38 and percentages of total taxa 11-21%. Lowest values occurred at reef stations, with NIS of 7-24 and percentages 3.2-9.6% and the highest number of NIS for the reef sites occurring on Marriott Reef in Nāwiliwili Bay, immediately outside the harbor breakwater.

This pattern is reflected in the dendrogram of Sorensen similarities for introduced and cryptogenic species at the 16 stations (Figure 8), which also shows a very similar pattern to the dendrogram for total taxa (Figure 6). Three clusters of stations were derived from the analysis, with one of these composed of two subclusters. Cluster A is composed entirely of harbor sites, i.e. the four main harbor stations plus Ma'ālaea and Port Allen Harbors, with NIS ranging 29-52. Cluster B has the remaining harbor stations and the Marriott reef station, with NIS of 22 to 29. Cluster C is all reef stations and NIS of 7 to 16, with a subcluster C1 composed of the Hale O Lone and Port Allen Reefs and subcluster C2 containing the Kaunakakai, Kawaihae, and Leleiwi reef stations. The Ma'ālaea reef station with 21 NIS is a single outlier, perhaps reflecting its relatively high NIS for a reef site.

A ranking analysis was performed to evaluate which NIS species commonly occurring in harbors were most represented in the NIS that occurred at reef sites. The 112 NIS species in Table 5 were ranked in the order of the number of the seven reef stations where they occurred and

Table 5. Introduced and cryptogenic species identified at survey stations. (*New reports for Hawaii).

Phylum/Class	Genus_Species	Status	KA1	KA2	KA3	KA4	MO1	MO2	MO3	MO4	MA1	MA2	MA3	MA4	HA1	HA2	HA3	HA4
RHODOPHYTA	<i>Acanthophora spicifera</i>	Introduced					x						x					
	<i>Hypnea musciformis</i>	Introduced					x						x					
	<i>Heteropia glomerosa</i>	Cryptogenic												x				
	<i>Suberites zeteki</i>	Introduced	x							x								
	<i>Bierma fistulosa</i>	Cryptogenic			x													x
	<i>Mycale armata</i>	Introduced	x	x	x						x					x		
	<i>Mycale cecilia</i>	Introduced	x	x				x								x		
	<i>Zygomycale parishii</i>	Introduced										x						
	<i>Topsentia</i> sp.	Cryptogenic									x							
	<i>Sigmadocia caerulea</i>	Introduced	x		x		x		x			x						
	<i>Gelliodes fibrosa</i>	Introduced	x	x	x		x		x		x					x		
	<i>Dysidea avara</i>	Cryptogenic	x															
	<i>Ganveia humilis</i>	Introduced	x															
	<i>Obelia dichotoma</i>	Introduced																
	<i>Corydendrium corrugatum</i>	Cryptogenic																
	<i>Antennella secundaria</i>	Cryptogenic																
	<i>Pennaria disticha</i>	Introduced	x	x	x		x		x		x				x			
<i>Ventromma halecioides</i>	Cryptogenic			x														
<i>Halopteris diaphana</i>	Cryptogenic									x								
<i>Halopteris polymorpha</i>	Cryptogenic									x								
<i>Plumularia floridana</i>	Cryptogenic																	
<i>Plumularia strictocarpa</i>	Cryptogenic												x					
<i>Dynamena cornicina</i>	Cryptogenic	x		x						x								
<i>Thyrocyphus fruticosus</i>	Cryptogenic																	
<i>Carijoa riisei</i>	Introduced										x							
<i>Culicia</i> n. sp.*	Cryptogenic	x																
<i>Platymereis abnormis</i>	Cryptogenic																	
<i>Lumbrineris sphaerocephala</i>	Cryptogenic																	
<i>Chaetopterus</i> sp.	Cryptogenic	x	x	x					x									
<i>Branchiommata nigromaculata</i>	Cryptogenic	x	x															
<i>Sabellastarte spectabilis</i>	Introduced	x	x															
<i>Hydroides crucigera</i>	Introduced																	
<i>Hydroides brachyacantha</i>	Introduced																	
<i>Hydroides cf. elegans</i>	Introduced	x																
<i>Hydroides crucigera</i>	Introduced																	
<i>Hydroides dirampha</i>	Introduced	x																
<i>Pomatoleios kraussii</i>	Introduced	x	x															
<i>Salmacina dysteri</i>	Introduced																	

Table 5 (cont.)

Phylum/Class	Genus_Species	Status	KA1	KA2	KA3	KA4	MO1	MO2	MO3	MO4	MA1	MA2	MA3	MA4	HA1	HA2	HA3	HA4		
POLYCHAETA	<i>Serpula vermicularis</i>	Cryptogenic	x								x							x		
	<i>Janua pagenstecheri</i>	Introduced										x							x	
	<i>Neodexiospira foraminosa</i>	Cryptogenic		x		x				x	x	x								
	<i>Neodexiospira nipponica</i>	Cryptogenic				x							x							
	<i>Pileolaria militaris</i>	Introduced									x									
	<i>Simplicaria pseudomilitaris</i>	Cryptogenic				x														
	<i>Hipponix australis</i>	Cryptogenic						x												
	<i>Crepidula aculeata</i>	Introduced	x	x		x					x	x	x			x			x	
	<i>Crucibulum spinosum</i>	Introduced						x									x			
	<i>Eualetes tulipa</i>	Introduced	x								x									x
BIVALVIA	<i>Hinemoa indica</i>	Introduced					x				x									
	<i>Crassostrea</i> sp.	Introduced	x		x						x	x	x							
	<i>Anomia nobilis</i>	Introduced	x								x									
	<i>Chama fibula</i>	Cryptogenic	x																	
	<i>Hiatella arctica</i>	Introduced	x	x		x					x				x					
	<i>Balanus amphitrite</i>	Introduced	x		x						x									
	<i>Balanus eburneus</i>	Introduced		x																
	<i>Balanus reticulatus</i>	Introduced	x		x															
	<i>Balanus</i> sp.	Introduced																		
	<i>Chthamalus proteus</i>	Introduced	x	x							x	x								
STOMATOPODA	<i>Gonodactylaceus falcatus</i>	Introduced																		
	<i>Cerapus</i> sp.*	Cryptogenic?																		
	<i>Corophium baconi</i>	Introduced																		
	<i>Erichthonius brasiliensis</i>	Introduced	x	x		x					x	x				x				
	<i>Photis hawaiiensis</i>	Cryptogenic	x								x									
	<i>Paraleucothoe flindersi</i>	Introduced	x	x		x					x									
	<i>Elasmopus rapax</i>	Introduced									x									
	<i>Podocerus brasiliensis</i>	Introduced																		
	<i>Stenothoe gallensis</i>	Introduced																		
	<i>Stenothoe valida</i>	Cryptogenic	x	x							x	x								
ISOPODA	<i>Caprella scaura</i>	Introduced																		
	<i>Paracerceis sculpta</i>	Introduced																		
	<i>Paradella dianae*</i>	Cryptogenic									x									
	<i>Pistorius bidens*</i>	Cryptogenic?	x																	
	<i>Pseudocerceis</i> sp.*	Cryptogenic?																		
	<i>Leptocheilia dubia</i>	Cryptogenic									x	x								
	<i>Parapseudes pedispinis</i>	Introduced																		
	<i>Discias musicus*</i>	Cryptogenic?																		
	TANAIDACEA																			
DECAPODA																				

Table 6. Numbers of introduced and cryptogenic species at neighbor island harbor and reef stations.

Taxa	KA1	KA2	KA3	KA4	MO1	MO2	MO3	MO4	MA1	MA2	MA3	MA4	HA1	HA2	HA3	HA4	All
RHODOPHYTA					2						2	1					2
PORIFERA	6	3	4	2	3			4	4	4	1	5		3		5	10
HYDROZOA	3	1	3	1	1			3	3	3	1	1	2	1		5	12
ANTHOZOA	1		2					2	1	1		2	1			1	2
POLYCHAETA	8	4	2	4	2		1	2	10	7	5	4	1	2		10	18
GASTROPODA	2	1	1	2	3	1	2	2	2	1	3	2		2	1	3	5
BIVALVIA	4	1	2	1	1	1	1	1	2	2	2	1	1	1	1	1	4
CIRRIPEDIA	3	1	4					1	2	3		1		1		3	5
PERICARIDA	5	6	8	1	6	1	5	5	7	9	3	6	2	4	2	4	16
DECAPODA	1	2	2		1	1	4	2	1	1	3		2	3		2	8
ECTOPROCTA	5	1	5	2	3	1		4	10	6		2	1	1	1	3	11
ECHINODERMATA	1	1	1	1	1	1		1								1	1
ASCIDIACEA	8	3	4	1	2			2	9	7	1	4		4		5	14
OSTEICTHYES	1			2	1	1	1		1				1		2	1	3
Total NIS	48	24	38	16	26	7	14	29	52	44	21	29	11	22	7	44	112
Total Taxa	157	251	184	219	236	204	247	182	152	121	304	226	235	210	217	128	1029
% NIS	30.6	9.6	20.7	7.3	11.0	3.4	5.7	15.9	34.2	36.4	6.9	12.8	4.7	10.5	3.2	34.4	10.9

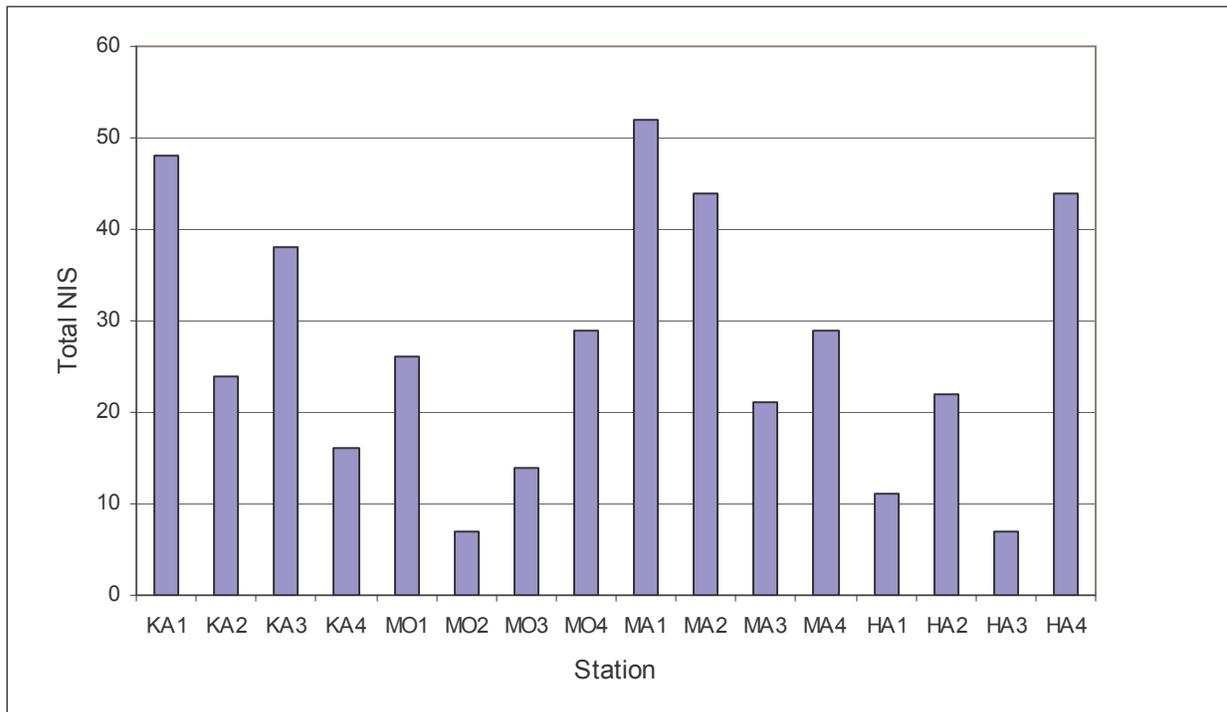


Figure 7. Distribution NIS species among neighbor island stations.

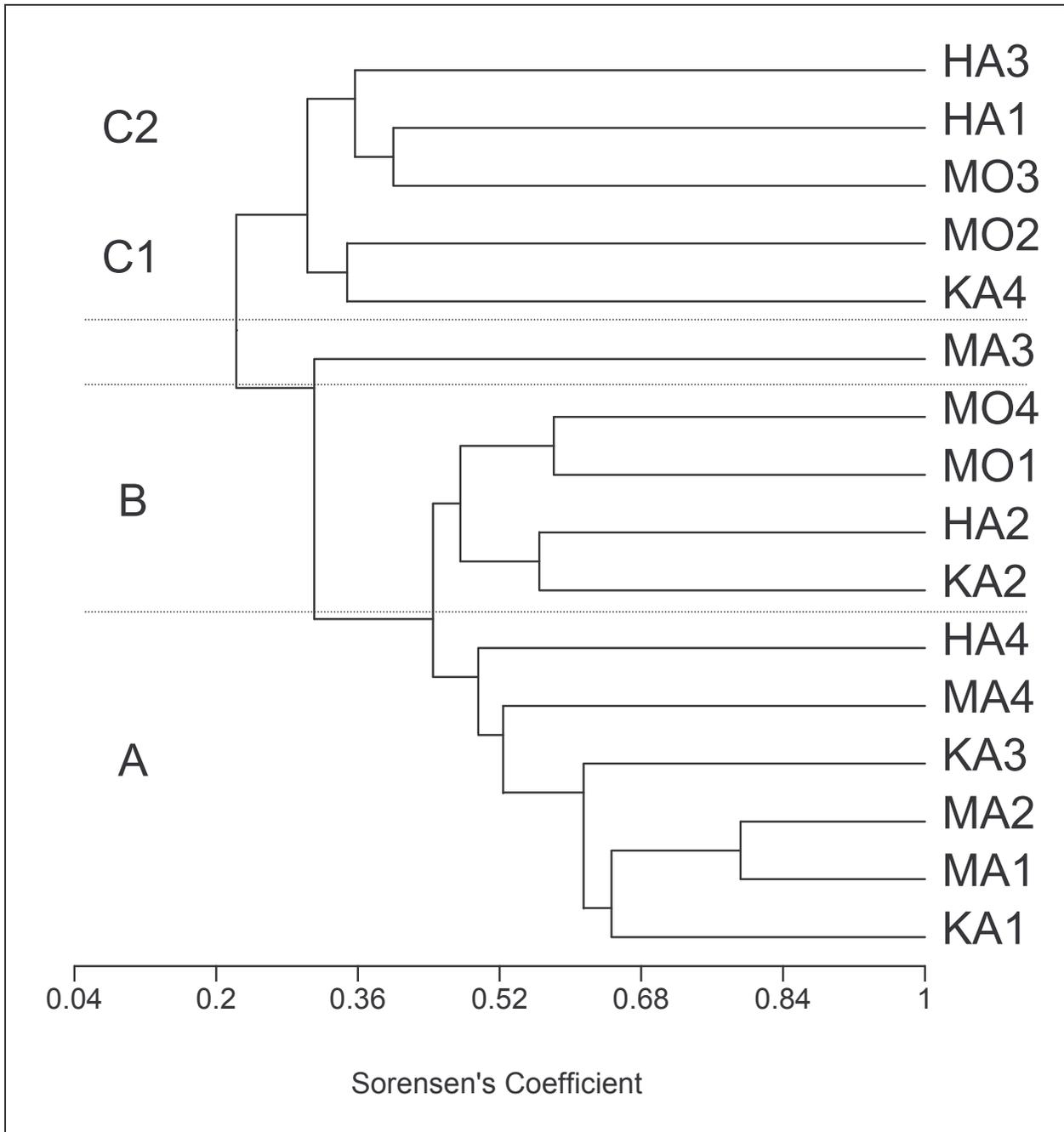


Figure 8. Dendrogram of similarity analysis for NIS at neighbor island harbor and reef stations.

Table 7. Comparison of NIS species occurrence at reef and harbor stations. Species in bold indicate those which ranked in the top 25 for both reef and harbor sites.

Taxa	Species	Reef Stations										Total Reef	Harbor Stations										Total Harbor
		KA2	KA4	MO2	MO3	MA3	HA1	HA3	KA1	KA3	MO1		MO4	MA1	MA2	MA4	HA2	HA4					
BIVALVIA	<i>Hiattella arctica</i>	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	6						
AMPHIPODA	<i>Elasmopus rapax</i>	x	x	x	x	x	x										1						
TANAIDACEA	<i>Leptochelia dubia</i>	x		x	x	x	x					x	x	x	x	x	7						
OSTEICHTHYES	<i>Cephalopholis argus</i>		x	x		x	x										0						
GASTROPODA	<i>Crepidula aculeata</i>	x	x			x					x	x	x	x	x	x	9						
DECAPODA	<i>Pilumnus oahuensis</i>	x				x											5						
HYDROZOA	<i>Pennaria disticha</i>	x	x			x					x	x	x	x	x	x	9						
OPHIUROIDEA	<i>Ophiactis savignyi</i>	x									x						5						
AMPHIPODA	<i>Ericthonius brasiliensis</i>	x									x	x	x	x	x	x	9						
ECTOPROCTA	<i>Amathia distans</i>	x	x								x	x					8						
POLYCHAETA	<i>Sabellastarte spectabilis</i>	x	x								x	x					5						
AMPHIPODA	<i>Paraleucothoe flindersi</i>	x									x	x					9						
DECAPODA	<i>Nikoides multispinatus*</i>										x						2						
POLYCHAETA	<i>Neodexiospira nipponica</i>		x			x											0						
POLYCHAETA	<i>Neodexiospira foraminosa</i>		x			x					x	x	x	x	x	x	6						
PORIFERA	<i>Mycale cecilia</i>	x	x														5						
PORIFERA	<i>Mycale armata</i>	x															6						
GASTROPODA	<i>Hipponix australis</i>										x						0						
ASCIDIACEA	<i>Herdmania pallida</i>	x															8						
STOMATOPODA	<i>Gonodactylaceus falcatus</i>										x	x	x	x	x	x	2						
PORIFERA	<i>Gelliodes fibrosa</i>	x	x								x	x	x	x	x	x	9						
GASTROPODA	<i>Eualetes tulipa</i>										x	x					5						
DECAPODA	<i>Discias musicus*</i>										x						0						
POLYCHAETA	<i>Chaetopterus sp.</i>	x															2						
POLYCHAETA	<i>Branchiomma nigromaculata</i>	x	x														2						

compared to the number of the nine harbor stations where they also occurred (Table 7). Shown in bold are the 25 species which occurred at more than one reef site and also were among the 25 species that occurred at the most harbor stations. The results indicate that 14 species were the most frequently occurring at both reef and harbor sites. These were the bivalve *Hiatella artica*, which was at seven reef and six harbor stations, the tanaid *Leptochelia dubia*, at five reef and seven harbor stations, and the gastropod *Crepidula aculeate* at four reef and all nine harbor stations. Seven of the remaining eleven species occurred at two or less harbor stations and four of these, the fish *Cephalopholis argus*, the polychaete *Neodexiospira nipponica*, the gastropod *Hipponix australis* and the decapod shrimp *Discias musicus* did not occur at any harbor site. Overall, the results do not indicate a high probability that NIS species frequently found in the harbors co-occur on nearby coral reefs

D. New species reports for Hawai'i

Eleven species were collected in this study that have not been previously reported in Hawai'i and these have been designated with an asterisk in Table 5 and assigned cryptogenic status. They include a coral, *Culicia* n.sp.; an amphipod, *Cerapus* sp.; three isopods *Paradella diana*e (Menzies, 1962), *Pistorius bidens* Harrison & Holdich, 1982, and *Pseudocerceis* sp.; four decapods, *Discias musicus* Holthuis, 1981, *Kemponia* cf. *amymoe* (De Man, 1902), *Kemponia galene* Holthuis, 1952, and *Nikodes mutispinatus* Hayashi, 1981; and two ectoprocts, *Esharoides angela* (Hutton, 1873) and *Watersipora arcuata* Banta, 1969. The coral *Culicia* n.sp. has actually been collected once before in 1987 by R. Fitzharding at Lilipuna Pier, Kāne'ohe, O'ahu (S. Cairns, pers. comm.), but did not occur in samples from O'ahu harbors nor in Kāne'ohe Bay in 1999-2000 (Coles et al. 1997, 1999b, 2002a, 2002b). The amphipod *Cerapus* sp. has recently been found to be a major food source for the fish *Enneapterygius atriceps* (Jenkins, 1903) (Longenecker and Langston in press). The isopod *Paradella diana*e has been reported in the western Atlantic and in the Pacific from California and Chile to Kenya and appears to be transported by shipping (Harrison and Ellis 1991). *Pistorius bidens* Harrison & Holdich, 1982, was previously reported from the waters of Queensland, Australia, and *Pseudocerceis* sp. from east and south Australia and east Africa. The decapod shrimp *Discias musicus* was previously known only from Saipan, and *Kemponia galene* from east Africa, Indonesia and the Great Barrier Reef. *Kemponia amymone* is known from throughout the Indo-West Pacific from New Guinea and the Philippines to Western Australia and the Nicobar Islands and in the South Pacific. The ectoprocts *Esharoides angela* and *Watersipora arcuata* are known from New Zealand and are potential introductions through fouling (C. Zabin, pers. comm.). With the exception of the three isopods, all of these species were infrequently found, occurring at only one or two of the 16 stations.

E. Invasive species

Only seven of the 112 introduced or cryptogenic species found in this study are considered invasive, i.e. known to monopolize habitats, consume, or overwhelm Hawaiian native species in their usual habitats (Coles and Eldredge 2002). These are the red algae *Acanthophora spicifera* (Vahl) Børgesen and *Hypnea musciformis* (Wulfen) J.V.Lamour., the sponge *Mycale armata*

Thiele, 1903, the octocoral *Carijoa riisei* (Duchassaing & Michelotti, 1860), the stomatopod *Gonodactylaceus falcatus* (Forsskål, 1775) and the fishes *Lutjanus kasmira* (Forsskål, 1775) and *Cephalopholus argus* Bloch and Schneider 1801. The two red algae occurred at Hale O Lono Harbor and Ma'alaea Reef, and *Hypnea musciformis* also occurred in Ma'alaea Harbor. The Orange Keyhole Sponge *Mycale armata* was the most widely occurring invasive invertebrate and was found in harbors at Nāwiliwili, Port Allen, Kahului, Ma'alaea, and Kawaihae, and in low abundance on Marriot and Ma'alaea reefs. The invasive octocoral *Carijoa riisei* occurred in all the major harbors except Nāwiliwili on Kaua'i and Kawaihae on Hawai'i, but was not observed at any reef site in this study. The stomatopod *Gonodactylaceus falcatus*, previously reported only from Kāneohe Bay and Waikīkī, occurred in samples from Port Allen and Kahului and from reefs at Kaunakakai and Ma'alaea. The invasive fish *Lutjanus kasmira*, normally common on open ocean reefs in Hawai'i, occurred only at Port Allen Reef, but *Cephalopholus argus* was widespread and observed on reefs at Port Allen, Hale O Lono, Kaunakakai, Kawaihae, and Leleiwi.

IV. DISCUSSION

Two principal conclusions can be derived from comparing the results of this with previous studies of marine NIS in Hawai'i and the tropical Pacific. 1) There is little or no difference between the composition and numbers of marine introduced and cryptogenic species that occur in the harbors and embayments of O'ahu and those that occur in the major harbors in the main Hawaiian Islands. 2) Similar to what has previously been found on O'ahu and elsewhere in the Pacific, introduced species occur far less frequently on coral reefs and open ocean environments than on the piers and docking areas of harbors, even when the reefs in question are near or even within the confines of the harbors.

In support of the first conclusion, although the maximum number of NIS at any harbor station in this study was 52, 112 NIS were reported overall for the stations surveyed. Deducting the 11 new Hawai'i reports that were tentatively assigned cryptogenic status, over 100 NIS occurred at the eight harbor stations, comparable to the total of 95 NIS reported for 15 stations in Pearl Harbor (Coles et al. 1997, Coles et al. 1999a), 100 NIS at 32 stations in O'ahu's commercial and recreational craft harbors (Coles et al. 1999b), and 116 NIS at 25 stations in Kāneohe Bay (Coles et al. 2002a). Since only one or two stations were surveyed in each harbor in the present study, it is probable that greater numbers of NIS would have occurred in each harbor with greater sampling effort, yielding similar site-specific results as were previously obtained for O'ahu's harbors and for Kāneohe Bay. This indicates that NIS in Hawai'i are widely distributed and are a major component of the marine community in harbors throughout that main Hawaiian chain, in contrast to the few NIS that have been found for Johnston Atoll, Midway or French Frigate Shoals, in the Northwestern Hawaiian Islands (Table 1).

The second conclusion is supported by the pattern of fewer NIS at reef stations compared to nearby harbor stations, ranging from seven NIS at Hale O Lono Reef, Moloka'i and Leleiwi Bay, Hawai'i to 24 at Marriot Reef just outside the Nāwiliwili Harbor breakwater on Kaua'i. Overall, the number of NIS at reefs was 14.3 ± 6.6 (mean + st. dev.) compared to $36.9 + 10.7$ at the harbor

stations, significantly different at $p < 0.001$ (t test assuming unequal variances). The distances of the reef stations from the piers and docking areas of the harbors ranged only 0.6-1.2 km except for Leleiwi Reef, which was 8.8 km from Hilo Harbor Pier 1 by the most direct route through the harbor entrance. Therefore, the results indicate that abundant potential source populations of NIS within the harbors have not spread substantially to nearby coral reefs or other habitats exposed to open ocean conditions. This conclusion is also supported by the co-occurrence analysis (Table 7) which shows few NIS species to be frequently found at both harbor and reef sites. Only six NIS that occurred at most of the nine harbor stations also occurred at more than two of the seven reef stations (Table 7).

A similar pattern of reduced presence of NIS with increasing exposure to oceanic conditions has been found in previous surveys in O'ahu harbors, Kāne'ohe Bay, and Pago Pago Harbor, American Samoa. In Pearl Harbor (Coles et al. 1997, Coles et al. 1999a) and Honolulu Harbor (Coles et al. 1999b) numbers of NIS species decreased with proximity to the harbor entrance and exposure to oceanic conditions, where both presence of coral-associated organisms and species richness of the total community showed substantial increases. Similarly, in both Kāne'ohe Bay (Coles et al. 2002a) and Pago Pago Harbor (Coles et al. 2003) fewer NIS species occurred in locations most exposed to oceanic conditions, and NIS decreased to minimal numbers at coral reef sites outside of the harbor or bay, with associated increases in total community species richness. In a systematic assessment of factors that might determine the occurrence of NIS on Hawaiian coral reefs (Coles et al. 2004) found that 45% of the variability of NIS numbers was explained by the degree of exposure of the sampling location to oceanic conditions, with an additional significant interaction of this factor with species richness of the total benthic community resulting in further NIS decreases.

Invasive introduced species occurred infrequently outside of harbors in this study, and those few that did occur were not abundant, usually represented by one or a few specimens or colonies at the specific site. Similar results were found for invasive species in rapid assessment species inventories conducted simultaneously with the present study at 41 coral reef sites throughout the main Hawaiian Islands (Coles et al. 2004), which found three species of invasive algae at one to seven sites, *Mycale armata* at five sites, *Carijoa riisei* at one site, *Lutjanus kasmira* at 10 sites and *Cephalopholus argus* at 23 sites. For the two invasive invertebrates found on reefs in the Coles et al (2004) study, *Mycale armata* occurred at one reef site on Kaua'i, two on Maui and two in Kāne'ohe Bay, O'ahu. *Carijoa riisei* occurred only at Mala Wharf, Maui, where it was moderately abundant on the undersides of concrete posts and sheet pilings of a collapsed dock. Although *Mycale armata* was not abundant at any of the reef sites reported in Coles et al (2004), it is abundant elsewhere in Kāne'ohe Bay where it can overgrow *Montipora verrucosa* and *Porites compressa* corals, and its distribution, abundance growth rate and impact on corals in Kāne'ohe Bay is presently being investigated (Coles et al. in prep.)

Based on the present results, it is difficult to explain or predict the occurrence and distribution of introduced and invasive species. For example, the invasive octocoral *Carijoa riisei* is very abundant on pier pilings in Port Allen Harbor on Kaua'i, and an effort has been mounted by the

state of Hawai'i Department of Land and Natural Resources Division of Aquatic Resources to remove it from the harbor before it spreads to adjacent reefs and offshore black coral beds, which as yet are not infested by this species. However, *C. riisei* has not been found in Nāwiliwili Harbor (AECOS Inc. 2002, Coles et al. 2004, Coles and Longenecker 2003), despite the fact this is the primary commercial harbor on Kaua'i with similar environmental conditions to Port Allen and other harbors where this species has proliferated. With nearly 70 years of commercial ship traffic having utilized Nāwiliwili Harbor, it would appear that there has been ample opportunity for establishment of *C. riisei*, and its absence from the harbor is surprising, especially considering its abundance in the less utilized Port Allen Harbor, only ca. 14 km away.

This example illustrates the difficulty of predicting where and how an invasive species may become established once it enters Hawaiian waters. Clearly there are ample vectors by which introduced species may be moved throughout the Hawaiian Islands by interisland shipping and recreational crafts. A recent study (Godwin and Eldredge 2004) of hull fouling as a dispersal mechanism of introduced species surveyed 35 boats, barges, and personal craft in O'ahu harbors and found these vessels to have a total of 60 introduced and cryptogenic species growing on hull surfaces, and an addition ten new records for Hawai'i were determined. Of the 60 introduced or cryptogenic species, 37 were recorded in harbors and/or reefs in the present study, indicating that there is a high probability for widespread distribution and establishment of an introduction throughout the main Hawaiian Islands.

The limited occurrence and impact of introduced and invasive species on coral reefs found in this study corroborates previous findings in Hawaiian waters, but should not lead to lack of concern about the potential impacts of invasive species in Hawaiian waters or inactivity in trying to prevent their introduction or distribution among the islands. The potential impact of any introduced species is at best unpredictable and at worst potentially devastating to the receiving environment and its native populations (Coles and Eldredge 2002). For those invasive species that do become problematical, cleanup and eradication programs have limited chance for successful removal unless the introductions are detected soon after their arrival and can be confined (Bax et al. 2002, Pyne 1999, Willan et al. 2000). The general public should be continually made aware of the potential damage that can result from release of imported aquarium pets or live food fish and invertebrates. These and other goals of the Hawai'i State Aquatic Invasive Species Management Plan (DLNR/DAR 2003) should be adopted and implemented to assure that the impact of marine introductions, both intentional and accidental, should be minimized to protect the vitality of Hawai'i's native marine biota.

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APPENDIX A

Native, Nonindigenous, and Cryptogenic Taxa Recorded on at harbor and nearby reef stations at
Kaua'i, O'ahu, Moloka'i, Maui, and Hawai'i, November 2002-October 2003.

Kaua'i: KA1-Nāwiliwili Harbor Pier 2; KA2-Marriott Hotel Reef; KA3-Port Allen Harbor Main Pier;
KA4-Port Allen Reef

Moloka'i: MO1-Hale O Lono Harbor Dock; MO2-Hale O Lono Reef; MO3-Kaunakakai Harbor
Reef; MO4-Kaunakakai Dock

Maui: MA1-Kahului Harbor Pier 1; MA2-Kahului Harbor Pier 2; MA3-Ma'alaea Reef; MA4-
Ma'alaea Small Boat Harbor

Hawai'i: HA1-Kawaihae Reef; HA2-Kawaihae Harbor Main Pier, HA3-Leleiwi Reef; HA4-Hilo
Harbor Pier 1

Kingdom: EUBACTERIA

Phylum: CYANOBACTERIA

Family: OSCILLATORIACEAE

***Lyngbya majuscula* Gomont**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x			x						x			
Coles et al. 2004	2002		x		x												
Coles et al. 2004	2003							x						x		x	

Family: PHORMIDIACEAE

***Symploca* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x			

Kingdom: PLANTAE

Phylum: BACILLARIOPHYTA

Family: COSCINODISCINEAE

***Biddulphia pulchella* Gray**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Ball 1977	1976													x			

Phylum: CHLOROPHYTA

***Chondrocococcus* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Family: ANADYOMENACEAE

***Microdictyon setchellianum* M.Howe**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x					
BISH 693957	1959			x													
BISH 668143	2001			x													

***Microdictyon* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 689362	2000															x	

Family: BRYOPSIDACEAE

***Bryopsis pennata* (Harv.) Collins & Hervey**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993											x					
BISH 664261	2000																x

***Bryopsis* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x													
Brewer & Assoc. 1987	1987											x					
AECOS 2002	2001	x															
BISH 551619	N/A									x							

***Derbesia* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 701227	1978											x					
BISH 689361	2000															x	

Trichosolen oahuensis (Egerod) Taylor

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x			

Family: CAULERPACEAE

Caulerpa racemosa (Forsskål) J.Agardh

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x										x	
BISH 701450	1978											x					
AECOS 2000	2000																x
BISH 701444	2001											x					
BISH 706946	2001													x			
Coles et al. 2004	2003															x	

Caulerpa serrulata (Forsskål) J.Agardh

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x	x								

Caulerpa sertularioides (Gmel.) M.Howe

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 701466	1996											x					

Caulerpa sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x		x											

Caulerpa webbiana Mont.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 701491	1978												x				

Caulerpella ambigua (Okamura) Prud'homme van Reine & Lokhorst

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x													
BISH 701377	1978											x					

Family: CHAETOPHORACEAE

Ulvella sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x													

Family: CLADOPHORACEAE

Chaetomorpha antennina (Bory) Kütz.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 515894	1959			x													
BISH 525229	1961			x													
BISH 628095	1978											x					
Brewer & Assoc. 1987	1987											x					
BISH 663726	2000	x															

Chaetomorpha sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1977	1977																x

Cladophora dotyana Gilbert

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 701222	1996												x				

Cladophora fascicularis (Mertens) Kutzing

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	2000																x

Cladophora laetevirens (Dillwyn) Kütz.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											
BISH 663719	2000	x															
BISH 771314	2001	x															
BISH 771306	2001	x															
BISH 771302	2001	x															

Cladophora luxurians Gilbert

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 771311	2001	x															

Cladophora patula Sakai

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Brewer & Assoc. 1987	1987											x					
AECOS 2000	2000																x

Cladophora sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study										x				x			x
Ball 1977	1976													x			
ORCA 1981	1981													x			
Brewer & Assoc. 1987	1987											x					
BISH 689347	2000															x	
Coles et al. 2004	2003													x			

Cladophora vagabunda (Linnaeus) van den Hoek

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x										
BISH 529972	1955									x							
BISH 529968	1959	x															
BISH 668125	2001			x													
BISH 772867	2001																x

Rhizoclonium riparium (Roth) Kütz. ex Harv.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 701787	2000									x							

Rhizoclonium sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														
BISH 669092	2001																x

Family: CODIACEAE

Codium arabicum Kütz.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 515743	1955									x							
BISH 515748	1959			x													

Codium edule P.C.Silva

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x			
BISH 531112	1959							x									
BISH 666338	2001			x													

Codium picturatum

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x	x										

Codium reediae P.C.Silva

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 531100	1955									x							
U.S. F&WS 1993	1993											x					
BISH 516039	N/A									x							
BISH 516040	N/A									x							
BISH 516035	N/A									x							

Codium reticulata

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993											x					

Codium sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											
Sunn et al. 1977	1977																x
Coles and Longenecker 2003	2003	x															

Family: DASYCLADACEAE

Neomeris annulata Dickie

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x	x					x					
Bigelow et al. 1989	1988							x									
Coles et al. 2004	2003											x					

Family: HALIMEDACEAE

Halimeda cf. opuntia (Linnaeus) J.V.Lamour.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles et al. 2004	2003							x				x					x

Halimeda discoidea Decne.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x					x

Halimeda gracilis

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Halimeda incrassata (Ellis) J.V.Lamour.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x					
Coles et al. 2004	2003											x					

Halimeda opuntia (Linnaeus) J.V.Lamour.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x	x	x	x				x					x
Brewer & Assoc. 1987	1987											x					
BISH 663129	2000																x
Coles et al. 2004	2002				x												

Halimeda sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x								
Sunn et al. 1977	1977																x
Brewer & Assoc. 1987	1987											x					
BISH 698135	2000																x
Coles et al. 2004	2003																x

Family: SIPHONOCLADACEAE

Boodlea composita (Harv. & Hook.) Brand

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 772742	2001			x													

Cladophoropsis membranacea (C.Agardh) Børgesen

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
								x									

Cladophoropsis sp.

Neighb. Isl. Consult. 1973	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1972																x

Cladophoropsis sundanensis Reinbold

BISH 664259	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	2000																x

Struvea sp.

BISH 701809	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1978											x					

Ventricaria ventricosa (J.Agardh) Olsen & West

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 706949	2001							x									x
BISH 708913	2003																x
Coles et al. 2004	2003							x									

Family: UDOTACEAE

Chlorodesmis hildebrandtii Gepp & Gepp

Brewer & Assoc. 1987	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1987											x					

Rhipidosiphon javensis Montagne

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 701785	1978											x					
												x					

Family: ULVACEAE

Enteromorpha clathrata (Roth) J.Agardh

Brewer & Assoc. 1987	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1987											x					

Enteromorpha compressa (Linnaeus) Grev.

BISH 772748	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 772864	2001			x													
	2001																x

Enteromorpha flexuosa (Wulfen) J.Agardh

BISH 663714	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 666770	2000		x														
	2001		x														

Enteromorpha intestinalis (Linnaeus) Link

Neighb. Isl. Consult. 1973	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 701260	1972																x
BISH 663315	1992											x					
	2000	x															

Enteromorpha prolifera (Müll.) J.Agardh

BISH 668135	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	2001			x													

Enteromorpha sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 516365	1955									x							
Ball 1977	1976													x			
Sunn et al. 1977	1977																x
ORCA 1981	1981													x			
Army Corps of Engin. 1994	1993													x			

Ulva fasciata Delile

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x	x				
BISH 516798		x															
BISH 516534.2		x															
BISH 516561	1955									x							
Neighb. Isl. Consult. 1973	1972																x
Ball 1977	1976													x			
ORCA 1981	1981													x			
Brewer & Assoc. 1987	1987											x					
U.S. F&WS 1993	1993											x					
Coles et al. 2004	2003											x					
BISH 523872	N/A									x							

Ulva lactuca Linnaeus

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
BISH 516641	N/A							x									

Ulva lobata (Kütz.) Setch. & N.L.Gardner

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 638766	1984									x							

Ulva reticulata Forsskål

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x					
BISH 515089	1955									x							
Brewer & Assoc. 1987	1987											x					
BISH 682867	1991									x							
U.S. F&WS 1993	1993											x					
BISH 701705	1998									x		x					
BISH 701703	2000											x					

Ulva rigida C.Agardh

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 664260	2000																x
BISH 772746	2001			x													
BISH 772866	2001																x

Ulva sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x			
Sunn et al. 1977	1977																x
BISH 701677	1978											x					
BISH 668118	2001			x													

Family: VALONIACEAE

Dictyosphaeria cavernosa (Forsskål) Bergesen

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x		x									
BISH 91965	1959							x									
Bigelow et al. 1989	1988							x									
BISH 698138	2001													x			
Coles et al. 2004	2003							x									

Dictyosphaeria versluysii Weber-van Bosse

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Ball 1977	1976													x			
BISH 628077	1978											x					
Bigelow et al. 1989	1988							x									

Valonia aegagropila C.Agardh

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											
Ball 1977	1976														x		
Army Corps of Engin. 1994	1993														x		
BISH 668142	2001			x													
BISH 516619	N/A							x									

Valonia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 701375	1978													x			

Phylum: PHAEOPHYTA

Family: CHNOOSPORACEAE

Chnoospora sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 519013	N/A														x		

Family: DICTYOTACEAE

Dictyopteris australis (Sond.) Askenasy

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 188560	1959			x													
BISH 513311	N/A			x													

Dictyopteris plagiogramma (Mont.) Vickers

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 513314	1959			x													

Dictyota acutiloba J.Agardh

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
BISH 513154	N/A			x													
BISH 523278	N/A							x									

Dictyota bartayresii J.V.Lamour.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Brewer & Assoc. 1987	1987													x			

Dictyota ceylanica Kütz.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											
BISH 771315	2001	x															
BISH 706951	2001													x			
BISH 699044	N/A			x													

Dictyota friabilis Setch.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x					
BISH 700547	1978											x					
BISH 513233	N/A																x

Dictyota sandvicensis Sond. ex Kütz.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Brewer & Assoc. 1987	1987													x			

Dictyota sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x	x		x						x		x	
Sunn et al. 1977	1977																x
M & E Pacific 1980	1980																x
BISH 700100	1994												x				
BISH 689344	2000																x
Coles et al. 2004	2003							x						x			x

Distromium sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x			

Lobophora variegata (J.V.Lamour.) Womersley

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 1992	1991	x															
AECOS 2000	2000																x
BISH 772753	2001				x												
BISH 668141	2001				x												

Padina australis Hauck

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Bigelow et al. 1989	1988							x									
BISH 523573	N/A				x												

Padina boryana Thivy

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											
BISH 700864	2000																x

Padina sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
M & E Pacific 1980	1980																x
AECOS 1992	1991	x															

Family: ECTOCARPACEAE

Bachelotia antillarum (Grunow) Gerloff

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 666694	2001				x												
BISH 772764	2001				x												

Ectocarpus sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
M & E Pacific 1980	1980																x

Giffordia breviarticulata (J.Agardh) I.A.Abbott

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Brewer & Assoc. 1987	1987													x			

Hincksia mitchelliae (Harv.) P.C.Silva

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 663715	2000	x															

Hincksia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 91967	1963	x															

Family: RALFSIACEAE

Mesospora schmidtii Weber-van Bosse

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 772868	2001																x

Ralfsia expansa (J.Agardh) J.Agardh

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 513705	N/A																x

Ralfsia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Brewer & Assoc. 1987	1987											x					

Family: SARGASSACEAE

Sargassum echinocarpum J.Agardh

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 700784	1978											x					
Brewer & Assoc. 1987	1987											x					
Bigelow et al. 1989	1988							x									
BISH 666340	2001			x													
BISH 516192	N/A																x

Sargassum polyphyllum J.Agardh

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x						x					
Bigelow et al. 1989	1988							x									
Coles et al. 2004	2003											x					

Sargassum sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x		x			x								
AECOS 2000	2000																x

Turbinaria ornata (Turner) J.Agardh

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x					
Bigelow et al. 1989	1988							x									
BISH 706979	2000															x	
Coles et al. 2004	2003											x					
BISH 188677	N/A			x													
BISH 188676	N/A			x													

Family: SCYTOSIPHONACEAE

Colpomenia sinuosa (Mertens ex Roth) Derbés & Solier

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											
BISH 513374	1955									x							
BISH 772745	2001			x													
BISH 513394	N/A																x

Colpomenia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1977	1977																x
BISH 513406	N/A																x

Rosenvingea intricata (J.Agardh) Børgeesen

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 706984	2000																x
BISH 522397	N/A									x							

Family: SPHACELARIACEAE

Sphacelaria novae-hollandiae Sond.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 771312	2001	x															

<i>Sphacelaria</i> sp.																			
Sunn et al. 1977	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
																			x
Phylum: RHODOPHYTA																			
<i>Desma hormemanni</i> Lyngb.																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
Coles et al. 2004	2003							x											
								x											
<i>Palmaella</i> sp.																			
Neighb. Isl. Consult. 1973	Year 1972	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
																			x
Rhodophyta (Unid. Coralline algae)																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
Coles et al. 2004	2003											x							
												x							
Family: ACROCHAETIACEAE																			
<i>Acrochaetium microscopicum</i>																			
BISH 771316	Year 2001	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
		x																	
<i>Acrochaetium seriatum</i> Børgesen																			
BISH 663717	Year 2000	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
BISH 771308	2001	x																	
		x																	
Family: BANGIACEAE																			
<i>Bangia atropurpurea</i> (Roth) C.Agardh																			
BISH 772757	Year 2001	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
				x															
Family: BONNEMAISONIACEAE																			
<i>Asparagopsis</i> sp.																			
Brewer & Assoc. 1987	Year 1987	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
												x							
<i>Asparagopsis taxiformis</i> (Delile) Trevisan																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
BISH 666831	2000					x	x					x		x			x		
Coles et al. 2004	2003											x		x			x		
BISH 708927	2003													x					
<i>Falkenbergia hillebrandii</i> (Ardiss.) Falkenb.																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
BISH 668121	2001			x		x	x	x				x		x					
Family: CAULACANTHACEAE																			
<i>Caulacanthus</i> sp.																			
Neighb. Isl. Consult. 1973	Year 1972	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
																			x

Family: CERAMIACEAE

***Acrothamnion butleriae* (Collins) Kylin**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 689350	2000																x

***Aglaothamnion boergesenii* (Aponte & Ballantine) L'Hardy-Halos & Rueness**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	
BISH 663720	2000	x						x									
BISH 668127	2001			x													

***Aglaothamnion cordatum* (Børgesen) Feldm.-Maz.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	
BISH 772750	2001			x				x									

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

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	
BISH 664250	2000												x				x

***Antithamnion* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x												x		

***Antithamnionella breviramosa* (E.Y.Dawson) Wollaston**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	
BISH 663727	2000	x						x									
BISH 772755	2001			x													

***Antithamnionella graeffei* (Grunow) Athanas.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 664258	2000																x

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

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x	x	x					x			
BISH 664251	2000																x
BISH 663154	2000	x															
BISH 771303	2001	x															
BISH 669090	2001																x
BISH 668119	2001			x													

***Centroceras* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
Army Corps of Engin. 1994	1993																x

***Ceramium borneense* Weber-van Bosse**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														

***Ceramium dumosertum* Norris & I.A.Abbott**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

***Ceramium flaccidum* (Kütz.) Ardissonne**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x				x		x				x				
BISH 664248	2000																x
BISH 663725	2000	x															
BISH 668136	2001			x													

Ceramium hanaense R.E.Norris & I.A.Abbott

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 771307	2001	x															

Ceramium macilentum J.Agardh

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x										

Ceramium punctiforme

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 663718	2000	x															

Ceramium sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x											x	x		
BISH 691236	1971											x					
BISH 691240	1976											x					
BISH 691241	1978											x					
BISH 689355	2000																x

Ceramium vagans P.C.Silva

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 772744	2001			x													

Diplothamnion jolyi van den Hoek

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x				x					

Griffithsia heteromorpha Kütz.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														
BISH 772738	2001			x													

Griffithsia schousboei Mont.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											
BISH 668131	2001			x													

Griffithsia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x		x			
BISH 691727	1994											x					
BISH 689343	2000																x

Griffithsia subcylindrica Okamura

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 700080	1984											x					

Haloplegma duperreyi Mont.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x	x						x			
BISH 689348	2000																x
BISH 706945	2001													x			
BISH 708938	2003													x			

Ptilothamnion cladophorae (Yamada & Tanaka) Feldm.-Maz.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									

Spyridia filamentosa (Wulfen) Harcey

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x						x	x				
AECOS 2000	2000																x
BISH 771300	2001	x															
Coles et al. 2004	2003											x					

Tiffaniella saccorhiza (Setch. & N.L.Gardner) Doty & Meñez

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											
BISH 689349	2000																x
BISH 668139	2001			x													

Family: CHAMPIACEAE

Champia parvula (C.Agardh) Harv.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x	x	x			
BISH 691295	1978											x					
BISH 668138	2001			x													

Champia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 517653	1955									x							
BISH 691292	1978											x					

Champia vieillardii Kütz.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 664256	2000																x

Family: CORALLINACEAE

Amphiroa beauvoisii J.V.Lamour.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 669091	2001																x

Amphiroa fragilissima (Linnaeus)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														
BISH 689352	2000																x

Amphiroa rigida J.V.Lamour.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x										
BISH 664249	2000																x
BISH 669304	2000															x	
BISH 772863	2001																x

Amphiroa sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														

Amphiroa valonioides Yendo

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 772741	2001			x													

Corallina sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Sunn et al. 1977	1977																x
Brewer & Assoc. 1987	1987											x					

Fosliella farinosa (J.V.Lamour.) M.Howe

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 664257	2000																x

Goniolithon sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Hydrolithon onkodes (Heydrich) Penrose & Woelkerling

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
ORCA 1981 (as <i>Porolithon onkodes</i>)	1981																x

Hydrolithon reinboldii (Weber-van Bosse & Foslie) Foslie

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	2000																x

Hydrolithon sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Brewer & Assoc. 1987	1987											x					

Jania adhaerens J.V.Lamour.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x	x					x					
BISH 691915	1978											x					
BISH 663724	2000	x															
BISH 664263	2000																x
BISH 668132	2001			x													

Jania pumila J.V.Lamour.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x										
BISH 771310	2001	x															

Jania sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x					
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1977	1977																x
BISH 691907	1977											x					
Brewer & Assoc. 1987	1987											x					
Coles et al. 2004	2003											x					

Lithophyllum sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Mesophyllum mesomorphum (Foslie) Adey

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x								

Porolithon gardineri (Foslie) Foslie

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x		x	
Coles et al. 2004	2003													x		x	

Porolithon onkodes (Heydrich) Foslie

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x			x				x		x		x	
Ball 1977	1976													x			
AECOS 2000	2000														x		x
Coles et al. 2004	2002				x												
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003							x				x		x		x	

Porolithon sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1977	1977																x
M & E Pacific 1980	1980																x
Brewer & Assoc. 1987	1987											x					
Bigelow et al. 1989	1988							x									
Army Corps of Engin. 1994	1993													x			

Sporolithon sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Brewer & Assoc. 1987	1987											x					

Family: DASYACEAE

***Dasya iridescens* (Schlech) A.Millar & I.A.Abbott**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x					x					
BISH 517627	1959			x													
BISH 666835	2000															x	
BISH 698136	2001													x			
Coles et al. 2004	2003											x		x			
BISH 708937	2003													x			

***Dasya pilosa* (Weber-van Bosse) A.Millar**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 688220	2000															x	
BISH 668130	2001			x													
BISH 708936	2003													x			

***Dasya* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x				x					
BISH 585594	1959			x													
BISH 692337	1994											x					
BISH 688223	2000															x	

Family: DELESSERIAACEAE

***Branchioglossum prostratum* Schneider**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 668137	2001			x													

***Cryptopleura corallinara* (Nott) N.L.Gardner**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 692333	1992											x					
BISH 664254	2000																x

***Cryptopleura* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 692332	1996											x					

***Dotyella hawaiiensis* (Doty & Wainwr.) Womersley & Shepley**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study													x				
BISH 689359	2000															x	

***Dotyella* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 600433	1959			x													

***Hemitrema* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Army Corps of Engin. 1994	1993													x			

***Martensia fragilis* Harv.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x					
BISH 692115	1996											x					
AECOS 2000	2000																x
BISH 666336	2001			x													
Coles et al. 2004	2003											x					

***Neomartensia flabelliformis* (Harv. ex J.Agardh) Yoshida & Mikami**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 693831	1996											x					
BISH 706982	2000															x	
BISH 708912	2003													x			

***Nitophyllum adhaerens* M.J.Wynne**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x				x	x						x			

***Taenioma perpusillum* (J.Agardh) J.Agardh**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x		x						x			
BISH 664252	2000																x
BISH 771309	2001	x															
BISH 772760	2001			x													

Vanvoorstia coccinea

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 706974	2000																x

Family: DICRANEMATACEAE

***Tenaciphyllum* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 666834	2000																x

Family: DUMONTIACEAE

***Dudresnaya hawaiiensis* R.K.S.Lee**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 669275	2000																x
BISH 698139	2001													x			

***Gibsmithia dotyi* Kraft & Ricker**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x								

***Gibsmithia hawaiiensis* Doty**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x		x	
BISH 706943	2001													x			
Coles et al. 2004	2003													x		x	
BISH 708939	2003													x			

***Gibsmithia* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 689360	2000																x

Family: GALAXAURACEAE

***Actinotrichia fragilis* (Forsskål) Børgesen**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 692595	1959			x													

***Actinotrichia* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

***Galaxaura acuminata* Butters**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x	x	x			
Coles et al. 2004	2003											x					

***Galaxaura marginata* (Ellis & Solander) J.V.Lamour.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study													x	x			
BISH 663130	2000															x	
BISH 706947	2001													x			
BISH 708940	2003													x			

Galaxaura rugosa (Ellis & Solander) J.V.Lamour.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x					
Coles et al. 2004	2003											x					

Galaxaura sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Brewer & Assoc. 1987	1987											x					
Coles et al. 2004	2003													x			

Galaxaura veprecula Kjellm.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 519572	N/A			x													

Scinaia furcata Zablackis

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x					
BISH 669269	2000															x	

Scinaia hormoides Setch.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 708919	2003														x		

Tricleocarpa fragilis (Linnaeus) Huisman & R.A.Towns.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 693542	1989									x							
BISH 693536	2000											x					

Family: GELIDIACEAE

Gelidium pusillum (Stackh.) Le Jolis

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 691749	1978											x					

Pterocladia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Pterocladia caerulescens (Kütz.) Santel. & Hommers.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x									x					
BISH 520245	1955									x							
Brewer & Assoc. 1987	1987											x					
BISH 772869	2001																x
BISH 668134	2001			x													

Pterocladia caloglossoides (M.Howe) Santel.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 693888	1978											x					
BISH 772870	2001																x

Pterocladia capillacea (Gmel.) Santel. & Hommers.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Brewer & Assoc. 1987	1987											x					
U.S. F&WS 1993	1993											x					
BISH 693890	2000									x							
BISH 666341	2001			x													
BISH 518190	N/A									x							

Pterocladia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
BISH 663722	2000	x															

Family: GELIDIELLACEAE

***Gelidiella* sp.**

BISH 666832	Year 2000	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Family: GIGARTINACEAE

Chondracanthus acicularis

BISH 691297	Year 1978	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

***Chondracanthus* sp.**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x														

Family: GRACILARIACEAE

***Gracilaria coronopifolia* J.Agardh**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993																x

***Gracilaria* sp.**

BISH 561799	Year 1902	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 561905	1980										x						
Brewer & Assoc. 1987	1987							x									

Family: HALYMENIACEAE

***Carpopeltis* sp.**

BISH 530656	Year N/A	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
											x						

***Cryptonemia* sp.**

BISH 692329	Year 1978	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 666833	2000																x

***Cryptonemia umbraticola* E.Y.Dawson**

BISH 708916	Year 2003	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

***Grateloupia filicina* (J.V.Lamour.) C.Agardh**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Ball 1977	1976																
ORCA 1981	1981																x
Brewer & Assoc. 1987	1987																x
Army Corps of Engin. 1994	1993																x
U.S. F&WS 1993	1993																x
Coles et al. 2004	2003																x
BISH 706046	N/A									x							

***Grateloupia hawaiiiana* E.Y.Dawson**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 499795	1955																x
Brewer & Assoc. 1987	1987										x						
Bigelow et al. 1989	1988							x									
BISH 700096	1992																x
BISH 691738	1995																x
BISH 691735	1995										x						
BISH 519920	N/A										x						

Grateloupia phuquocensis Tanaka & P.H.Ho

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Brewer & Assoc. 1987	1987																x

Grateloupia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 519924	1955									x							
BISH 519918	N/A									x							
BISH 516870	N/A									x							

Halymenia formosa Harv. ex Kütz.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	
Coles et al. 2004	2003													x			
Coles and Longenecker 2003	2003			x													
BISH 520069	N/A									x							

Halymenia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x						x		x	
BISH 586623	1959			x													
M & E Pacific 1980	1980																x
BISH 669266	2000																x
Coles et al. 2004	2003																x
BISH 531089	N/A									x							

Polyopes hakalauensis (Tilden) I.A.Abbott

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 664264	2000																x

Family: HILDENBRANDIACEAE

Hildenbrandia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Family: HYPNEACEAE

Hypnea cornuta J.Agardh

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Brewer & Assoc. 1987	1987																x

Hypnea musciformis (Wulfen) J.V.Lamour.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x						x	x				
U.S. F&WS 1993	1993											x					
BISH 691985	2000									x							
Coles et al. 2004	2003													x			

Introduced**Hypnea pannosa J.Agardh**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 706978	2000																x
BISH 668122	2001			x													

Hypnea sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x								x			
Neighb. Isl. Consult. 1973	1972																x
Army Corps of Engin. 1994	1993													x			

Hypnea spinella (C.Agardh) Kütz.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x						x			
BISH 772749	2001			x													

***Hypneocolax stellaris* Børgeesen**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x							x				

Family: KALLYMENIACEAE

***Kallymenia sessilis* Okamura**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x										
BISH 706988	2000															x
BISH 708934	2003												x			

***Kallymenia* sp.**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 688215	2000															x

***Kallymenia thompsonii* I.A.Abbott & McDermid**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 669264	2000															x

Family: LIAGORACEAE

***Helminthocladia* sp.**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 701829	1987										x					
BISH 701828	1990										x					

Family: LOMENTARIACEAE

***Gelidiopsis intricata* (C.Agardh) Vickers**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x											
BISH 771305	2001	x														

***Gelidiopsis scoparia* (Mont. & Millardet) De Toni**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x											
BISH 772763	2001		x													

***Gelidiopsis* sp.**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 517975	1955								x							
BISH 519102	1975												x			
BISH 519094	N/A												x			

***Gelidiopsis variabilis* (C.Agardh) F.Schmitz**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 664266	2000															x

***Lomentaria hakodatensis* Yendo**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x						x			

Family: NEMASTOMATACEAE

***Predaea laciniosa* Kraft**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 663131	2000															x

***Predaea weldii* Kraft & I.A.Abbott**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 663133	2000															x

Family: PEYSSONNELIACEAE

***Cruoriella* sp.**

Neighb. Isl. Consult. 1973	Year 1972	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

***Peyssonnelia inamoena* Pilg.**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x											x

***Peyssonnelia rubra* (Grev.) J.Agardh**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 664265	2000	x		x	x			x									x
BISH 669093	2001																x
Coles et al. 2004	2002				x												
Coles and Longenecker 2003	2003	x		x													

***Peyssonnelia* sp.**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 698132	2000	x													x		
BISH 708935	2003													x			

Family: PLOCAMIACEAE

***Plocamium* sp.**

Brewer & Assoc. 1987	Year 1987	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
													x				

Family: PORPHYRIDACEAE

***Stylonema alsidii* (Zanardini) Drew**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
							x										

Family: PTEROCELIDACEAE

***Mastocarpus papillatus* (C.Agardh) Kütz.**

Neighb. Isl. Consult. 1973 (as <i>Gigartina papillata</i>)	Year 1972	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Family: RHIZOPHYLLIDACEAE

***Portieria hornemannii* (Lyngb.) P.C.Silva**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 663132	2000		x				x	x									x
Coles et al. 2004	2002		x														

Family: RHODOMELACEAE

***Acanthophora pacifica* (Setch.) Kraft**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 472299	1955		x			x		x									
BISH 472393	1967									x							
BISH 688221	2000									x							x

***Acanthophora spicifera* (Vahl) Børgesen**

	Year															Introduced		
		Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study						x						x						
BISH 91969	1973	x																
Ball 1977	1976														x			
ORCA 1981	1981														x			
Brewer & Assoc. 1987	1987											x						
BISH 683011	1991									x								
AECOS 1992	1991	x																
U.S. F&WS 1993	1993												x					
BISH 689357	2000																	x
BISH 662480	2000	x																
BISH 668123	2001			x														
BISH 665980	2001	x																
BISH 772747	2001			x														
Coles et al. 2004	2003												x					
BISH 523279	N/A							x										

***Ahnfeltia* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Sunn et al. 1977	1977																x

***Ahnfeltiopsis concinna* (J.Agardh) P.C.Silva & De Cew**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 519969	1955									x							
BISH 458942	1967									x							
Neighb. Isl. Consult. 1973 (as <i>Ahnfeltia concinna</i>)	1972																x
Ball 1977 (as <i>Ahnfeltia concinna</i>)	1976														x		
Brewer & Assoc. 1987	1987											x					
U.S. F&WS 1993 (as <i>Ahnfeltia concinna</i>)	1993											x					
BISH 662482	2000	x															
BISH 669757	2001	x															

***Ahnfeltiopsis divaricata* (Holmes) Masuda**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 666439	2001																x
BISH 669253	2001	x															

***Ahnfeltiopsis flabelliformis* (Harv.) Masuda**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 693280	1977											x					
BISH 662785	2000																x
BISH 666339	2001			x													

***Ahnfeltiopsis* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 519959	1955									x							

***Amansia glomerata* C.Agardh**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x			x		x						x			
AECOS 2000	2000																x

***Chondria dangeardii* E.Y.Dawson**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 772754	2001			x													

***Chondria minutula* Weber-van Bosse**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x			

Chondria simpliciuscula Weber-van Bosse

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x									x					
BISH 668129	2001			x													
BISH 772751	2001			x													

Chondria sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x						x			
BISH 689346	2000															x	
BISH 771304	2001	x															

Exophyllum wentii Weber-van Bosse

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 688218	2000																x

Herposiphonia dubia Hollenb.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 668140	2001			x													

Herposiphonia pacifica Hollenb.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 772752	2001			x													

Herposiphonia parca Hollenb.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 668128	2001			x													

Herposiphonia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x		x			
BISH 689345	2000															x	

Laurencia crustiformans McDermid

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 525432	N/A																x

Laurencia decumbens Kütz.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 691425	1995																x

Laurencia majuscula (Harv.) Lucas

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 571073	1959			x													

Laurencia parvipapillata Tseng

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 706950	2001																x

Laurencia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x									x		
BISH 698133	2000																x

Laurencia succisa Cribb

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 698137	2001																x

Leveillea jungermannioides (Hering & Martens) Harv.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 692180	1978																x

Lophocladia kipukaia Schlech

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											

Melanamansia daemellii (Sond.) R.E.Norris

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 692132 (as <i>Amansia daemellii</i>)	2000												x				

Melanamansia fimbrifolia Norris

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 698134	2000																x

Melanamansia glomerata (C.Agardh) R.E.Norris

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x			x		x				x		x			
BISH 458963 (as <i>Amansia glomerata</i>)	1959			x													
BISH 519037 (as <i>Amansia glomerata</i>)	1975													x			
Ball 1977 (as <i>Amansia glomerata</i>)	1976													x			
BISH 692152 (as <i>Amansia glomerata</i>)	1978											x					
Brewer & Assoc. 1987 (as <i>Amansia glomerata</i>)	1987											x					
U.S. F&WS 1993 (as <i>Amansia glomerata</i>)	1993											x					
Army Corps of Engin. 1994 (as <i>Amansia glomerata</i>)	1993													x			
BISH 669265 (as <i>Amansia glomerata</i>)	2000																x
BISH 706948 (as <i>Amansia glomerata</i>)	2001													x			
BISH 666342 (as <i>Amansia glomerata</i>)	2001				x												
Coles et al. 2004	2002		x														
BISH 708914 (as <i>Amansia glomerata</i>)	2003													x			
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003								x					x			

Neosiphonia flaccidissima (Hollenb.) M.S.Kim & I.K.Lee

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 594553	1959			x													

Neosiphonia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study													x				

Neosiphonia sparsa (Hollenb.) I.A.Abbott

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 588011	1959			x													

Neosiphonia sphaerocarpa (Børgesen) M.S.Kim & I.K.Lee

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 664255	2000																x
BISH 772865	2001																x

Neosiphonia tongatensis (Harv. ex Kütz.) M.S.Kim & I.K.Lee

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x			
BISH 663723	2000		x														
BISH 771301	2001		x														

Osmundaria obtusiloba (C.Agardh) R.E.Norris

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 693830	1995												x				

<i>Polysiphonia apiculata</i> Hollenb.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 594501	1959				x													
<i>Polysiphonia beaudettii</i> Hollenb.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 668124	2001				x													
<i>Polysiphonia delicatula</i> Hollenb.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 600434	1959				x													
<i>Polysiphonia hawaiiensis</i> Hollenb.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 693820	1977													x				
<i>Polysiphonia homoia</i> Setch. & N.L.Gardner		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 587524	1959				x													
<i>Polysiphonia mollis</i> Hook. & Harv.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Ball 1977	1976																	x
ORCA 1981	1981																	x
<i>Polysiphonia</i> sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 693791	1978													x				
BISH 693804	1984													x				
BISH 689351	2000																	x
<i>Polysiphonia tsudana</i>		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study										x								
<i>Polysiphonia upolensis</i> (Grunow) Hollenb.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 772739	2001				x													
<i>Spirocladia hodgsoniae</i> I.A.Abbott		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x		x		
<i>Symphyocladia marchantioides</i> (Harv.) Falkenb.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 772759	2001				x													
<i>Tolypocladia glomerulata</i> (C.Agardh) F.Schmitz		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x			x	x	x							x		
BISH 689354	2000																	x
<i>Tolypocladia</i> sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Ball 1977	1976																	x
BISH 693514	1978													x				
ORCA 1981	1981																	x
<i>Ululania stellata</i> Apt & Schlech		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 772756	2001				x													
BISH 669094	2001				x													

Family: RHODYMENIACEAE

Botryocladia sp.

M & E Pacific	1980	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
		1980																	x

Chrysymenia procumbens Weber-van Bosse

BISH 585637	1959	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
		1959			x														

Coelothrix irregularis (Harv.) Børgesen

Brewer & Assoc.	1987	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
		1987											x						

Coelothrix sp.

BISH 525441	N/A	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
		N/A													x				

Halichrysis coalescens (Farl.) A.Millar & R.E.Norris

Present Study		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BISH 706944	2001	2001													x			
BISH 708917	2003	2003													x			

Rhodymenia leptophylla J.Agardh

Present Study	2000	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
BISH 669268	2000	2000		x															x

Family: SCHIZYMENIACEAE

Titanophora pikeana (Dickie) Feldmann

BISH 708920	2003	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		2003													x			

Titanophora sp.

BISH 587776	1959	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
BISH 663128	2000	2000			x														x

Titanophora weberae Børgesen

BISH 688212	2000	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
		2000																	x

Family: WURDMANNIACEAE

Wurdemannia sp.

Neighb. Isl. Consult.	1973	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
		1972																	x

Kingdom: ANIMALIA

Phylum: PORIFERA

Class: CALCAREA

Subclass: CALCINEA

Order: CLATHRINIDA

Family: CLATHRINIDAE

Clathrina sp.

Present Study		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
																			x

Family: LEUCETTIDAE

Leucecetta sp.

Cheney et al., 1977	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Subclass: CALCARONEA

Order: LEUCOSOLENIIDA

Family: HETEROPIIDAE

Heteropia glomerosa (Bowerbank, 1873)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1997												x				

Cryptogenic

Class: DEMOSPONGIAE

Subclass: HOMOSCLEROMORPHA

Order: HOMOSCLEROPHORIDA

Family: PLAKINIDAE

Plakortis sp. 1

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
															x		

Plakortis sp. 2

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x		x	x		x	x				x					x

Subclass: TETRACTINOMORPHA

Order: ASTROPHORIDA

Family: ANCORINIDAE

Stellettinopsis kaena (de Laubenfels, 1957)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x	x										x				

Order: HADROMERIDA

Family: CHONDRILLIDAE

Chondrosia chucalla de Laubenfels, 1936

AECOS 1992	Year 1991	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x															

Family: CLIONIDAE

Cliona vastifica Hancock, 1849

Cheney et al., 1977	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Cryptogenic

Family: SPIRASTRELLIDAE

Sphaciospongia vagabunda (Ridley, 1884)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
							x	x				x			x		

Spirastrella coccinea (Duchassaing & Michelotti, 1864)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
															x		

Spirastrella vagabunda Ridley, 1884

AECOS 2000	Year 2000	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
															x		

Family: SUBERITIDAE

Suberites zeteki de Laubenfels, 1936

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x								x							
AECOS 1992	1991	x															
DeFelice, unpub. Ed. Grant	1996	x															

Introduced

Terpios sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977													x			

Family: TETHYIDAE

Tethya sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x								

Order: LITHISTIDA

Suborder: ANOPLINA

Family: AZORICIDAE

Unid. Azoricidae

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x	x		

Subclass: CERACTINOMORPHA

Order: POECILOSCLERIDA

Suborder: MICROCIONINA

Family: MICROCIONIDAE

Clathria sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x	x	x	
AECOS 2000	2000														x		x

Suborder: MYXILLINA

Family: ANCHINOIDAE

Phorbas sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														

Family: COELOSPHAERIDAE

Lissodendoryx hawaiiiana (de Laubenfels, 1950)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x									x			x		

Family: DESMACIDIDAE

lotrochota protea (de Laubenfels, 1950)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	2000														x		x

lotrochota sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x								x	x			x	x		x
DeFelice, unpub. Ed. Grant	1997														x		

Family: MYXILLIDAE

Myxilla sp.

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x								

Family: TEDANIIDAE

Tedania n.sp.

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x					x			x					

Tedania sp.

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant 1996	x															

Suborder: MYCALINA

Family: DESMACELLIDAE

Biemna fistulosa (Topsent, 1897)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Cryptogenic
Present Study			x														
AECOS 1992	1991	x															x
AECOS 2000	2000																x
Coles and Longenecker 2003	2003	x		x													

Family: MYCALIDAE

Mycale armata Thiele, 1903

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Introduced
Present Study	x	x	x						x	x	x	x		x			
AECOS 1992	1991	x															
DeFelice, unpub. Ed. Grant	1997								x								
Coles et al. 2004	2002		x														
Coles and Longenecker 2003	2003	x		x													
Coles et al. 2004	2003											x					

Mycale cecilia de Laubenfels, 1936

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Introduced
Present Study	x	x		x				x				x		x		x	
DeFelice, unpub. Ed. Grant	1996	x															
DeFelice, unpub. Ed. Grant	1997																x

Mycale sp.

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x					x								
DeFelice, unpub. Ed. Grant	1996	x														
DeFelice, unpub. Ed. Grant	1997													x		

Stylinos sp.

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x								x		x		

Ulosa rhoda (de Laubenfels, 1957)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x				

Zygomycale parishii (Bowerbank, 1875)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Introduced
Present Study										x		x					
AECOS 1992	1991	x															
DeFelice, unpub. Ed. Grant	1997								x								

Order: HALICHONDRIDA

Family: AXINELLIDAE

Unid. Axinellidae

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x									x	

Family: HALICHONDRIIDAE

Amorphinopsis sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1996	x															
DeFelice, unpub. Ed. Grant	1997									x							

Axinyssa sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x															

Halichondria coerulea Bergquist, 1967

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1996	x															
DeFelice, unpub. Ed. Grant	1997									x							

Cryptogenic

Halichondria melanadocia de Laubenfels, 1936

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1996	x															

Introduced

Halichondria sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x						x							
Neighb. Isl. Consult. 1973	1972																x
DeFelice, unpub. Ed. Grant	1997									x							x

Topsentia dura Lindgren, 1897

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Halochondria dura</i>)	1972																x

Cryptogenic

Topsentia halichondroides (Thiele, 1898)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1996	x															

Topsentia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study										x							x

Cryptogenic

Order: HAPLOSCLERIDA

Family: CALLYSPONGIIDAE

Callyspongia diffusa (Ridley, 1884)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	2000														x		x

Family: CHALINIDAE

Chalinidae (purple)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1996	x															
DeFelice, unpub. Ed. Grant	1997									x							x

Chalinidae n.sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x						x	x				x		x

Haliclona (Gellius) sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x	x										x		x

***Sigmadocia caerulea* Hechtel, 1965**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x		x			x		x						x
AECOS 1992	1991	x															
DeFelice, unpub. Ed. Grant	1996	x															
Coles and Longenecker 2003	2003	x															

Introduced***Toxiclona sp.***

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1996	x															

Family: NIPHATIDAE

***Gelliodes fibrosa* (Wilson, 1925)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x	x	x			x	x	x		x		x		x
DeFelice, unpub. Ed. Grant	1996	x															
DeFelice, unpub. Ed. Grant	1997									x					x		
Coles et al. 2004	2002		x														
Coles and Longenecker 2003	2003	x		x													

Introduced***Niphates sp.***

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1996	x															
DeFelice, unpub. Ed. Grant	1997									x					x		

Order: DICTYOCERATIDA

Family: SPONGIIDAE

***Hippospongia cf. metachromia* Bergquist, 1967**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x			x					x			x		x

Spongia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

Family: THORECTIDAE

Hyrtilos sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x				x	x					x	x		
DeFelice, unpub. Ed. Grant	1997														x		

Order: DENDROCERATIDA

Family: DARWINELLIDAE

***Aplysilla rosea* (Barrois, 1876)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1996	x															
DeFelice, unpub. Ed. Grant	1997																x

Aplysilla sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														x

***Aplysilla violacea* Lendenfeld, 1883**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1997																x

Family: DYSIDEIDAE

***Dysidea arenaria* Bergquist, 1965**

DeFelice, unpub. Ed. Grant	Year 1996	Ka1 x	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Cryptogenic
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***Dysidea avara* (Schmidt, 1862)**

Present Study	Year	Ka1 x	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Cryptogenic
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***Dysidea cf. avara* (Schmidt, 1862)**

AECOS 2000	Year 2000	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Cryptogenic
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***Dysidea herbacea* (Keller, 1889)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Cryptogenic
Neighb. Isl. Consult. 1973	1972													x				x

***Dysidea* sp.**

Present Study	Year	Ka1 x	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Introduced
DeFelice, unpub. Ed. Grant	1997					x			x	x				x	x			x

***Dysidea* sp. 1**

DeFelice, unpub. Ed. Grant	Year 1997	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Cryptogenic
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***Dysidea* sp. 3**

DeFelice, unpub. Ed. Grant	Year 1996	Ka1 x	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Cryptogenic
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Phylum: CNIDARIA

Class: HYDROZOA

Order: HYDROIDA

Family: AGALOPHENIIDAE

***Gymnangium hians* (Busk, 1852)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Cryptogenic
AECOS 2000	2000			x														x

***Macrorhynchia philippina* Kirchenpauer, 1872**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Cryptogenic
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Family: BOUGAINVILLIIDAE

***Garveia humilis* (Verrill, 1928)**

Present Study	Year	Ka1 x	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Introduced
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Family: CAMPANULARIIDAE

***Obelia dichotoma* (Linnaeus, 1758)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Introduced
DeFelice, unpub. Ed. Grant	1997									x								x

Family: HALECIIDAE

***Halecium* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x							x								
DeFelice, unpub. Ed. Grant	1997									x							

Family: HALOCORDYLIDAE

***Corydendrium corrugatum* Nutting, 1905**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
DeFelice, unpub. Ed. Grant	1997																x

Cryptogenic

***Pennaria disticha* (Goldfuss, 1820)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x	x	x				x	x			x	x		x
Neighb. Isl. Consult. 1973 (as <i>Pennaria</i> sp.)	1972																x
Cheney et al., 1977 (as <i>Pennaria tiarella</i>)	1977														x		
AECOS 1992	1991	x															
DeFelice, unpub. Ed. Grant	1996	x		x													
DeFelice, unpub. Ed. Grant	1997									x			x				x
AECOS 2000	2000															x	x
Coles et al. 2004	2002		x		x												
Coles et al. 2004	2003														x		
Coles and Longenecker 2003	2003	x		x													

Introduced

Family: HALOPTERIDIDAE

***Antennella secundaria* (Gmelin, 1791)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

Cryptogenic

Family: KIRCHENPAUERIIDAE

***Ventromma halecioides* (Alder, 1859)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x													

Cryptogenic

Family: PLUMULARIIDAE

***Halopteris diaphena* (Heller, 1868)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study										x	x						

Cryptogenic

***Halopteris polymorpha* (Billard, 1913)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study										x	x						x

Cryptogenic

***Plumularia floridana* (Nutting, 1905)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

Cryptogenic

***Plumularia strictocarpa* Pictet, 1893**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

Cryptogenic

Family: SERTULARIIDAE

***Dynamena cornicina* McCrady, 1858**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x						x							
DeFelice, unpub. Ed. Grant	1996			x													
DeFelice, unpub. Ed. Grant	1997									x							

Cryptogenic

Sertularia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x						x									
Coles et al. 2004	2003							x									

Thyroscyphus fruticosus (Esper, 1793)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
Coles and Longenecker 2003	2003	x															

Cryptogenic

Class: ANTHOZOA

Subclass: OCTOCORALLIA

Order: GORGONACEA

Family: MELITHAEIDAE

Acabaria bicolor (Nutting, 1908)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000 (as <i>Arbacia bicolor</i>)	2000																x

Order: ALCYONACEA

Family: ALCYONIIDAE

Sinularia molokaiensis Verseveldt, 1983

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									
Coles et al. 2004	2003							x									

Family: CLAVULARIIDAE

Carijoa riisei (Duchassaing & Michelotti, 1860)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x					x	x	x		x				x
DeFelice, unpub. Ed. Grant	1997																x
AECOS 2000	2000																x
Coles and Longenecker 2003	2003			x													

Introduced

Family: XENIIDAE

Sarcothelia edmondsoni (Verrill, 1928)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x		x	x									
Neighb. Isl. Consult. 1973	1972																x
Cheney et al., 1977 (as <i>Anthelia edmondsoni</i>)	1977													x			
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003	x		x													

Subclass: HEXACORALLIA

Order: ACTINIARIA

Unid. Actinaria spp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1996			x													
DeFelice, unpub. Ed. Grant	1997																x

Unid. Actinaria spp. (juv.)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x	x	x		x	x	x			x		x		x

Family: ACTINIIDAE

***Anthopleura nigrescens* (Verrill, 1928)**

BPBM-D 177 (as <i>Tealiopsis nigrescens</i>)	Year 1931	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Family: AIPTASIIDAE

***Aiptasia* sp.**

AECOS 1992	Year 1991	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x															

***Aiptasia* sp. (juv.)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
										x							x

Family: ALICIIDAE

***Triactis producta* Klunzinger, 1877**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x											

Family: BOLOCEROIDIDAE

***Bolocerooides* sp. (juv.)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Family: EDWARDSIIDAE

***Edwardsiella carneola* Verrill, 1928**

BPBM-D 110	Year N/A	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x														

Family: ISOPHELLIIDAE

***Epiphellia humilis* (Verrill, 1928)**

Neighb. Isl. Consult. 1973	Year 1972	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

***Telmatactis humilis* (Verrill, 1928)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Family: SAGARTIIDAE

***Sagartia pusilla* Verrill, 1928**

BPBM-D 111	Year N/A	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x														

Order: SCLERACTINIA

Family: ACROPORIDAE

Montipora capitata (Dana, 1846)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x	x	x	x	x			x	x	x	x	x	
BPBM-SC 877 (as <i>Montipora verrucosa</i>)	1931											x					
BPBM-SC 1082 (as <i>Montipora verrucosa</i>)	1931											x					
Neighb. Isl. Consult. 1973 (as <i>Montipora verrucosa</i>)	1972																x
Holmes and Narver 1976 (as <i>Montipora verrucosa</i>)	1976													x			
Sunn et al. 1977 (as <i>Montipora verrucosa</i>)	1977																x
Cheney et al., 1977 (as <i>Montipora verrucosa</i>)	1977													x			
M & E Pacific 1980 (as <i>Montipora verrucosa</i>)	1980																x
Bigelow et al. 1989	1988							x									
AECOS 1992	1991	x															
Zieman 1992 (as <i>Montipora verrucosa</i>)	1992							x									
U.S. F&WS 1993 (as <i>Montipora verrucosa</i>)	1993											x					
Army Corps of Engin. 1994 (as <i>Montipora verrucosa</i>)	1993													x			
DeFelice, unpub. Ed. Grant	1996			x													
CRAMP website	1999-2001											x					
AECOS 2000	2000														x		x
CRAMP website	2000															x	
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003	x		x													
Coles et al. 2004	2003						x	x				x		x		x	

Montipora flabellata Studer, 1902

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x		x	x	x			x				x	
Sunn et al. 1977	1977																x
M & E Pacific 1980	1980																x
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
CRAMP website	2000															x	
Coles et al. 2004	2002		x		x												
Coles et al. 2004	2003						x	x				x		x		x	
Coles and Longenecker 2003	2003			x													

Montipora patula Verrill, 1864

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x	x	x	x	x			x	x	x		x	
Neighb. Isl. Consult. 1973	1972																x
Holmes and Narver 1976	1976													x			
Sunn et al. 1977	1977																x
Cheney et al., 1977	1977													x			
M & E Pacific 1980	1980																x
Zieman 1992	1992							x									
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
AECOS 2000	2000														x		
CRAMP website	2000															x	
CRAMP website	2001									x							
Coles et al. 2004	2002		x		x												
Coles et al. 2004	2003						x	x				x		x		x	
Coles and Longenecker 2003	2003	x		x													

Montipora sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Hawaii Harb. Div. 1976	1976									x							
Coles et al. 2004	2003						x										

Montipora studeri Vaughan, 1907

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x										

Montipora verrilli Vaughan, 1907

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-SC 1078	1931											x					
BPBM-SC 1079	1971											x					
Neighb. Isl. Consult. 1973	1972																x
Cheney et al., 1977	1977													x			

Family: AGARICIIDAE

Leptoseris incrustans (Quelch, 1886)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x			x								

Pavona duerdeni Vaughan, 1907

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x				x	x					x	x			
Holmes and Narver 1976	1976														x		
Cheney et al., 1977	1977														x		
(as <i>Pavona explanulata</i>)																	
M & E Pacific 1980	1980																x
CRAMP website	1999-2001											x					
CRAMP website	2000															x	
CRAMP website	2001													x			
Coles et al. 2004	2003						x	x						x		x	

Pavona maldivensis (Gardiner, 1905)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x													
Coles et al. 2004	2002				x												
Coles and Longenecker 2003	2003			x													

Pavona varians Verrill, 1864

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x	x	x	x	x					x	x	x	x
Neighb. Isl. Consult. 1973	1972																x
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
Sunn et al. 1977	1977																x
M & E Pacific 1980	1980																x
Army Corps of Engin. 1994	1993													x			
CRAMP website	2000															x	
AECOS 2000	2000														x		
CRAMP website	2001													x			
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003						x	x						x		x	

Family: FAVIIDAE

***Cyphastrea ocellina* (Dana, 1846)**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x								x		x	
Neighb. Isl. Consult. 1973	1972															x
BPBM-SC 1070	1972										x					
Holmes and Narver 1976	1976												x			
Cheney et al., 1977	1977												x			
Sunn et al. 1977	1977															x
M & E Pacific 1980	1980															x
Bigelow et al. 1989	1988						x									
Army Corps of Engin. 1994	1993												x			
AECOS 2000	2000													x		
Coles et al. 2004	2003												x		x	
Coles and Longenecker 2003	2003			x												

***Leptastrea inequalis* Klunzinger, 1879**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study													x			
Holmes and Narver 1976 (as <i>Leptastrea bottae</i>)	1976												x			
Cheney et al., 1977 (as <i>Leptastrea bottae</i>)	1977												x			
Coles et al. 2004	2003												x			

***Leptastrea purpurea* Dana, 1846**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x			x				x		x	x		
Holmes and Narver 1976	1976												x			
Cheney et al., 1977	1977												x			
Sunn et al. 1977	1977															x
M & E Pacific 1980	1980															x
Brewer & Assoc. 1987	1987										x					
Army Corps of Engin. 1994	1993												x			
AECOS 2000	2000													x		
Coles et al. 2004	2002			x												
Coles et al. 2004	2003						x				x		x		x	
Coles and Longenecker 2003	2003			x												

***Leptastrea* sp.**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-SC 1072 (as <i>Leptastrea bewickensis</i>)	1931												x			
BPBM-SC 1373	1972												x			

Family: FUNGIIDAE

***Fungia scutaria* Lamarck, 1801**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x											x		x	
Holmes and Narver 1976	1976												x			
Sunn et al. 1977	1977															x
M & E Pacific 1980	1980															x
Army Corps of Engin. 1994	1993												x			
AECOS 2000	2000													x		
CRAMP website	2001												x			
Coles et al. 2004	2002		x													
Coles et al. 2004	2003												x		x	

Family: POCILLOPORIDAE

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

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x		x			x				x				
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1977	1977																x
Cheney et al., 1977	1977													x			
M & E Pacific 1980	1980																x
Brewer & Assoc. 1987 (as <i>Pocillopora cespitosa</i>)	1987											x					
Bigelow et al. 1989	1988							x									
AECOS 1992	1991	x															
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
DeFelice, unpub. Ed. Grant	1996			x													
DeFelice, unpub. Ed. Grant	1997												x				
CRAMP website	1999-2001											x					
AECOS 2000	2000														x		x
CRAMP website	2001													x			
Coles et al. 2004	2002		x														
Coles et al. 2004	2003															x	
Coles and Longenecker 2003	2003	x															

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

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x							x		x	x	x	
BPBM-SC 1089	1916											x					
BPBM-SC 1146	1916											x					
(as <i>Pocillopora modumanensis</i>)																	
BPBM-SC 1088	1945											x					
Holmes and Narver 1976	1976													x			
Brewer & Assoc. 1987 (as <i>Pocillopora madumanensis</i>)	1987											x					
U.S. F&WS 1993	1993											x					
AECOS 2000	2000														x		
CRAMP website	2001													x			
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003											x		x		x	

***Pocillopora lingulata* Dana, 1846**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-SC 1087	1945									x							
BPBM-SC 2536	1945											x					
Holmes and Narver 1976	1976													x			

***Pocillopora meandrina* Dana, 1846**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x	x	x	x	x			x	x	x	x	x	
Sunn et al. 1973	1973	x															
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
ORCA 1981	1981													x			
Bigelow et al. 1989	1988							x									
Zieman 1992	1992							x									
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
CRAMP website	2000																x
AECOS 2000	2000										x						
CRAMP website	2001													x			
Coles et al. 2004	2002		x		x												
Coles et al. 2004	2003						x	x				x		x		x	
Coles and Longenecker 2003	2003	x		x													

***Pocillopora molokensis* Vaughan, 1907**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x								

Family: PORITIDAE

***Porites (Synaraea) rus* (Forsskål, 1775)**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x	x									
Holmes and Narver 1976 (as <i>Porites (Synaraea) convexa</i>)	1976												x			
Cheney et al., 1977 (as <i>Porites (Synaraea) sp.</i>)	1977												x			
Sunn et al. 1977 (as <i>Porites irregularis</i>)	1977															x
M & E Pacific 1980 (as <i>Porites (Synaraea) irregularis</i>)	1980															x
U.S. F&WS 1993	1993										x					
Coles et al. 2004	2003												x			

***Porites compressa* Dana, 1846**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x	x	x	x	x					x	x	x	
BPBM-SC 1091	1910										x					
Neighb. Isl. Consult. 1973	1972															x
Holmes and Narver 1976	1976												x			
Sunn et al. 1977	1977															x
Cheney et al., 1977	1977												x			
M & E Pacific 1980	1980															x
BPBM-SC 1098	1982										x					
Brewer & Assoc. 1987	1987										x					
Bigelow et al. 1989	1988						x									
Zieman 1992	1992						x									
U.S. F&WS 1993	1993															
Army Corps of Engin. 1994	1993												x			
CRAMP website	1999-2001										x					
AECOS 2000	2000													x		
CRAMP website	2000														x	
CRAMP website	2001												x			
Coles et al. 2004	2002	x		x												
Coles et al. 2004	2003					x	x						x		x	
BPBM-SC 1094	N/A										x					

***Porites duerdeni* Vaughan, 1907**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles et al. 2004	2002	x														

***Porites evermanni* Vaughan, 1907**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x	x	x	x				x		x			
BPBM-SC 3939	1916										x					
Zieman 1992	1992						x									
Army Corps of Engin. 1994	1993												x			
CRAMP website	1999-2001										x					
AECOS 2000	2000													x		
CRAMP website	2000														x	
CRAMP website	2001												x			
Coles et al. 2004	2002	x		x												
Coles et al. 2004	2003					x	x				x		x		x	
Coles and Longenecker 2003	2003		x													

Porites lobata Dana, 1846

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x	x	x	x	x			x	x	x	x		
Neighb. Isl. Consult. 1973	1972																x
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
Sunn et al. 1977	1977																x
Brewer & Assoc. 1987	1987											x					
Bigelow et al. 1989	1988							x									
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
AECOS 2000	2000															x	
CRAMP website	2000											x					
CRAMP website	2001													x			
Coles et al. 2004	2002				x												
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003						x	x				x		x		x	

Family: RHIZANGIIDAE

Culicia n.sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x					x					x	x		

Cryptogenic

Family: SIDERASTREIDAE

Psammocora sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x	x	x	

Psammocora stellata Verrill, 1864

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976	1976													x			
Sunn et al. 1977	1977																x
M & E Pacific 1980	1980																x
Coles et al. 2004	2003													x		x	

Psammocora verrilli Vaughan, 1907

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977													x			
AECOS 2000	2000																x

Order: ZOANTHIDEA

Unid. Zoanthidea

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														

Family: ZOANTHIDAE

Palythoa caesia Dana, 1848

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x			x						x	x	x	
BPBM-D 665 (as <i>Palythoa tuberculosa</i>)	1966											x					
Sunn et al. 1973 (as <i>Palythoa tuberculatus</i>)	1973	x															
Holmes and Narver 1976	1976													x			
Bigelow et al. 1989 (as <i>Palythoa tuberculosa</i>)	1988							x									
Coles et al. 2004	2002		x														
Coles et al. 2004	2003							x						x		x	
Coles and Longenecker 2003	2003			x													

Palythoa vestitus (Verrill, 1928)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976	1976													x			

Zoanthus pacificus Walsh & Bowers, 1971

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														
Coles et al. 2004	2002		x														
Coles and Longenecker 2003	2003			x													

Zoanthus sp. (pink)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														
Coles et al. 2004	2002		x														
Coles and Longenecker 2003	2003			x													

Subclass: CERIANTIPATHARIA

Order: ANTIPATHARIA

Family: ANTIPATHIDAE

Antipathes sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														

Cirripathesanguina Dana, 1846

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	2000															x	

Phylum: CTENOPHORA

Unid. Ctenophora

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x					
Coles et al. 2004	2003											x					

Phylum: ANNELIDA

Class: POLYCHAETA

Family: AMPHINOMIDAE

Chloeia flava (Pallas, 1766)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									

Eurythoe complanata (Pallas, 1766)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x						x	x			x	x		x		
DeFelice, unpub. Ed. Grant	1997									x			x				
AECOS 2000	2000															x	

Notopygos sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									

Pherecardia striata (Kinberg, 1857)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x	x				x			x			x	x	
BPBM-R 638	1931											x					
U.S. F&WS 1993	1993											x					
DeFelice, unpub. Ed. Grant	1997									x							

Unid. Amphinomidae (juv.)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x						x	x				
DeFelice, unpub. Ed. Grant	1997									x			x				

Family: ARENICOLIDAE

Arenicolidae (sp. 1)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x															
DeFelice, unpub. Ed. Grant	1996	x															

Family: CHAETOPTERIDAE

Chaetopterus sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Cryptogenic
Present Study		x	x	x				x		x	x							x
AECOS 1992	1991	x																
DeFelice, unpub. Ed. Grant	1996	x																
AECOS 2000	2000														x			x
Coles et al. 2004	2002		x															
Coles and Longenecker 2003	2003				x													

Mesochaetopterus cf. sagittarius (Claparede, 1870)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	2000														x		x

Phyllochaetopterus verrilli Treadwell, 1943

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														
Neighb. Isl. Consult. 1973	1972																x
DeFelice, unpub. Ed. Grant	1996				x												

Unid. Chaetopteridae

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Sunn et al. 1973	1973	x															

Family: CHRYSOPETALIDAE

Paleanotus sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x	x						x		

Family: CIRRATULIDAE

Cirratulidae (sp. 1)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x				x	x		x			x	

Cirriformia punctata (Grube, 1856)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x				x	x	x	x	x		x	

Cirriformia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x		x			x	x	x	x	x	x	x	x	x

Cirriformia sp. 2

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

Dodecaceria laddi Hartman, 1954

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x								x	x	x	x		x

Unid. Cirratulidae (juv.)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x						x			

Family: DORVILLEIDAE

***Apophryotrocha* sp.**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x													

***Dorvillea angolana* (Augener, 1918)**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x	x	x	x				x	x	x	x	x	
DeFelice, unpub. Ed. Grant	1996		x													
DeFelice, unpub. Ed. Grant	1997								x		x	x				

***Dorvillea* sp.**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x												

***Schistomeringos* sp.**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x							x					x		
DeFelice, unpub. Ed. Grant	1996		x													
DeFelice, unpub. Ed. Grant	1997											x				

Family: EUNICIDAE

***Eunice antennata* (Savigny, 1820)**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1996	x														
DeFelice, unpub. Ed. Grant	1997								x		x					

***Eunice australis* Quatrefages, 1865**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x												
DeFelice, unpub. Ed. Grant	1997								x		x			x		

***Eunice cf. afra* Peters, 1854**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study	x		x			x								x	x	
DeFelice, unpub. Ed. Grant	1996	x														
DeFelice, unpub. Ed. Grant	1997											x				

***Eunice cf. antennata* (Savigny, 1820)**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study	x				x		x	x	x	x	x			x		x

***Eunice cf. cariboea* (Grube, 1856)**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x					x	x						

***Eunice cf. filamentosa* Grube, 1856**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study	x	x	x		x	x		x	x	x		x	x			x

***Eunice filamentosa* Grube, 1856**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1996	x		x												
DeFelice, unpub. Ed. Grant	1997											x	x			

***Eunice* sp.**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x			x	x				x	x	
DeFelice, unpub. Ed. Grant	1997											x				

***Eunice* sp. 2**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																x
DeFelice, unpub. Ed. Grant	1997											x				

		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
<i>Eunice sp. 3</i>																		
Present Study			x			x												x
DeFelice, unpub. Ed. Grant		1996			x													
<i>Eunice vittata (delle Chiaje, 1828)</i>																		
Present Study						x								x	x	x		x
BPBM-R 1644		1976		x														
DeFelice, unpub. Ed. Grant		1997										x	x					
<i>Lysidice ninetta</i> Audouin & Milne Edwards, 1833																		
Present Study				x	x	x	x						x	x	x	x	x	x
DeFelice, unpub. Ed. Grant		1996			x													
DeFelice, unpub. Ed. Grant		1997								x		x	x					
<i>Marphysa cf. corallina</i> Kinberg, 1865																		
Present Study																		x
DeFelice, unpub. Ed. Grant		1997																x
<i>Marphysa sp.</i>																		
Present Study											x							
BPBM-R 1525		1916											x					
<i>Nematoneis unicornis</i> Schmarda, 1861																		
Present Study			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
DeFelice, unpub. Ed. Grant		1996	x		x													
DeFelice, unpub. Ed. Grant		1997								x		x	x					
<i>Palola siciliensis</i> (Grube, 1840)																		
Present Study				x		x				x			x	x				
DeFelice, unpub. Ed. Grant		1996			x													
DeFelice, unpub. Ed. Grant		1997								x			x					
<i>Paramarphysa sp.</i>																		
Present Study											x							
<i>Paramarphysa sp. 2</i>																		
Present Study											x	x						
<i>Paramarphysa sp. 3</i>																		
Present Study			x	x		x					x	x	x	x	x	x		x
DeFelice, unpub. Ed. Grant		1996	x		x													
DeFelice, unpub. Ed. Grant		1997								x		x	x					
<i>Paramarphysa sp. 4</i>																		
Present Study																		x
Unid. Eunicidae (juv.)																		
Present Study				x	x						x		x					
DeFelice, unpub. Ed. Grant		1996			x													
DeFelice, unpub. Ed. Grant		1997								x								

Family: GLYCERIDAE

***Glycera* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x					x			
DeFelice, unpub. Ed. Grant	1997											x					

Family: LUMBRINERIDAE

***Lumbrineris* cf. *sarsi* (Kinberg, 1865)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x	x												

***Lumbrineris* cf. *sphaerocephala* (Schmarda, 1861)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Cryptogenic
Present Study		x	x			x				x	x	x	x					x
DeFelice, unpub. Ed. Grant	1996	x		x														
DeFelice, unpub. Ed. Grant	1997									x			x					

***Lumbrineris* *dentata* Hartmann-Schroder, 1965**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x		x			x					x	x		
DeFelice, unpub. Ed. Grant	1996	x		x													
DeFelice, unpub. Ed. Grant	1997											x	x				

***Lumbrineris* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x				x								x			
DeFelice, unpub. Ed. Grant	1996	x															
DeFelice, unpub. Ed. Grant	1997												x				

Family: MALDANIDAE

Unid. Maldanidae

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x					x									
DeFelice, unpub. Ed. Grant	1996			x													

Family: NEREIDIDAE

***Ceratonereis* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x										x	x	x	
DeFelice, unpub. Ed. Grant	1996	x															
DeFelice, unpub. Ed. Grant	1997											x					

***Ceratonereis* *tentaculata* Kinberg, 1866**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														
DeFelice, unpub. Ed. Grant	1996			x													

Nereididae (sp. 1)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x												x		
DeFelice, unpub. Ed. Grant	1996			x													

Nereididae (sp. 2)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x		x	x	x			x							x
DeFelice, unpub. Ed. Grant	1996	x		x													

Nereididae (sp. 3)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x			x											
DeFelice, unpub. Ed. Grant	1996			x													

Nereididae (sp. 4)																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
DeFelice, unpub. Ed. Grant	1997						x			x		x				x			
Nereis sp.																			
Neighb. Isl. Consult. 1973	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
	1972																x		
Perinereis curvata Holly, 1935																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
						x													
Perinereis sp.																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
											x						x		
Platynereis abnormis Horst, 1924																			Cryptogenic
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
DeFelice, unpub. Ed. Grant	1997											x							x
Platynereis sp.																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
DeFelice, unpub. Ed. Grant	1997					x		x						x		x			
Platynereis sp. 2																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
DeFelice, unpub. Ed. Grant	1997					x	x	x	x								x		
Unid. Nereididae (juv.)																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
											x								x
Family: OENONIDAE																			
Oenone sp.																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
DeFelice, unpub. Ed. Grant	1996	x		x						x									x
Family: OPHELIIDAE																			
Polyophthalmus pictus Dujardin, 1839																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
DeFelice, unpub. Ed. Grant	1997							x				x	x	x					
Family: PHYLLODOCIDAE																			
Eulalia sp.																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
DeFelice, unpub. Ed. Grant	1996	x																	
Phyllodoce cf. madeirensis (Langerhans, 1880)																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
DeFelice, unpub. Ed. Grant	1996		x				x	x	x	x		x	x	x	x				
DeFelice, unpub. Ed. Grant	1997			x							x								

<i>Phyllodoce</i> sp. 1		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study											x					x		x	
<i>Phyllodoce</i> sp. 2		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study								x	x										
Phyllodocidae (sp. 1)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study																		x	
Phyllodocidae (sp. 2)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study			x					x			x	x							
DeFelice, unpub. Ed. Grant		1996	x																
Unid. Phyllodocidae (juv.)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study													x	x					
Unid. Phyllodocidae spp. (juv.)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
DeFelice, unpub. Ed. Grant		1997									x		x	x					
Family: POLYNOIDAE																			
<i>Iphione muricata</i> (Savigny, 1818)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study				x	x								x						
BPBM-R 1383		1959			x														
BPBM-R-1383		1959			x														
DeFelice, unpub. Ed. Grant		1996			x														
DeFelice, unpub. Ed. Grant		1997									x								
<i>Lepidasthenia</i> sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study									x							x			
DeFelice, unpub. Ed. Grant		1997											x						
<i>Lepidonatus</i> sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
DeFelice, unpub. Ed. Grant		1996	x		x														
DeFelice, unpub. Ed. Grant		1997											x						
<i>Lepidonototus</i> sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study			x	x				x			x	x			x	x	x	x	
<i>Thormora atrata</i> (Treadwell, 1940)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study						x												x	
Unid. Polynoidae (juv.)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study				x			x	x					x						
Unid. Polynoidae spp. (juv.)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
DeFelice, unpub. Ed. Grant		1996			x														
DeFelice, unpub. Ed. Grant		1997									x								

Family: SABELLIDAE

***Branchiomma nigromaculata* (Baird, 1865)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x		x					x	x		x				
DeFelice, unpub. Ed. Grant	1996	x		x													
DeFelice, unpub. Ed. Grant	1997												x				

Cryptogenic

***Hypsicomus phaeotaenia* (Schmarda, 1861)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x		x			x	x	x	x	x	x	x		x
DeFelice, unpub. Ed. Grant	1996	x		x													
DeFelice, unpub. Ed. Grant	1997									x		x	x				

***Hypsicomus* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x	x	x			x	x	x	x	x	x	x	x	x
DeFelice, unpub. Ed. Grant	1996	x															
DeFelice, unpub. Ed. Grant	1997									x		x	x				

***Megalomma* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x						x			x		x	x		
DeFelice, unpub. Ed. Grant	1996	x		x													
DeFelice, unpub. Ed. Grant	1997									x		x					

***Potamilla* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x													

***Sabellastarte* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x									x				x		
DeFelice, unpub. Ed. Grant	1996	x															

***Sabellastarte spectabilis* (Grube, 1878)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x		x				x	x	x				x		x
AECOS 1992	1991	x															
Army Corps of Engin. 1994 (as <i>Sabellastarte sanctijosephi</i>)	1993													x			
U.S. F&WS 1993 (as <i>Sabellastarte sanctijosephi</i>)	1993											x					
AECOS 2000	2000														x		x
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003	x															

Introduced

***Sabellidae* (sp. 1)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x			x												
DeFelice, unpub. Ed. Grant	1996	x															

***Sabellidae* (sp. 2)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x														
DeFelice, unpub. Ed. Grant	1996	x		x													

***Sabellidae* (sp. 3)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study										x	x	x	x				
DeFelice, unpub. Ed. Grant	1997									x			x				

***Sabellidae* (sp. 4)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study										x	x	x	x				
DeFelice, unpub. Ed. Grant	1997									x			x				

Unid. Sabellidae		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
	Sunn et al. 1973	1973	x																
Unid. Sabellidae (juv.)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
	Present Study		x				x	x					x					x	
Unid. Sabellidae spp. (juv.)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
	DeFelice, unpub. Ed. Grant	1996	x																
	DeFelice, unpub. Ed. Grant	1997									x								
Family: SERPULIDAE																			
<i>Hydroides brachyacantha</i> Rioja, 1941		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
	Present Study										x								Introduced
<i>Hydroides cf. elegans</i> (Haswell, 1883)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
	Present Study		x																x
	DeFelice, unpub. Ed. Grant	1996	x																
<i>Hydroides crucigera</i> (Mörch, 1863)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
	Present Study												x						x
	DeFelice, unpub. Ed. Grant	1997									x								
<i>Hydroides dirampha</i> (Mörch, 1863)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
	Present Study		x																x
	Neighb. Isl. Consult. 1973 (as <i>Hydroides lunulifera</i>)	1972																	x
	DeFelice, unpub. Ed. Grant	1996	x																
<i>Hydroides elegans</i> (Haswell, 1883)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
	Neighb. Isl. Consult. 1973 (as <i>Hydroides norvegica</i>)	1972																	x
<i>Pomatoleios kraussii</i> Baird, 1865		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
	Present Study		x	x							x	x							x
	Neighb. Isl. Consult. 1973	1972																	x
	DeFelice, unpub. Ed. Grant	1996	x		x														
<i>Protula atypha</i> Bush, 1904		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
	Neighb. Isl. Consult. 1973	1972																	x
<i>Pseudovermilia occidentalis</i> McIntosh, 1885		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
	Present Study													x					
	Neighb. Isl. Consult. 1973 (as <i>Vermiliopsis hawaiiensis</i>)	1972																	x
	DeFelice, unpub. Ed. Grant	1997												x					
<i>Salmacina dysteri</i> (Huxley, 1855)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
	Present Study		x								x	x	x	x		x			x
	Neighb. Isl. Consult. 1973	1972																	x
	DeFelice, unpub. Ed. Grant	1997									x			x					
	AECOS 2000	2000																	x
	Coles and Longenecker 2003	2003			x														

		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
<i>Serpula vermicularis</i> Linnaeus, 1767																			Cryptogenic	
	Present Study		x								x	x							x	
	DeFelice, unpub. Ed. Grant	1996	x																	
<i>Spirobranchus giganteus</i> (Pallas, 1776)																				
	AECOS 2000	2000																	x	
<i>Spirobranchus giganteus corniculatus</i> (Grube, 1862)																				
	Present Study								x				x	x					x	
	U.S. F&WS 1993	1993											x							
	Army Corps of Engin. 1994	1993																	x	
	DeFelice, unpub. Ed. Grant	1997									x									
	Coles et al. 2004	2003							x										x	
Unid. Serpulidae																				
	Present Study						x												x	
<i>Vermiliopsis</i> sp.																				
	Present Study																		x	
<i>Vermiliopsis torquata</i> Treadwell, 1943																				
	Present Study				x	x	x		x	x			x	x	x				x	
	DeFelice, unpub. Ed. Grant	1997									x		x	x						
Family: SIGALIONIDAE																				
<i>Sthenelais</i> sp.																				
	BPBM-R 1645	1976		x																
Family: SPIONIDAE																				
<i>Prionospio</i> sp.																				
	BPBM-R 1630	1976		x																
Family: SPIROBIDAE																				
<i>Janua pagenstecheri</i> Quatrefages, 1865																				Introduced
	Present Study																			x
<i>Neodexiospira foraminosa</i> (Moore & Bush, 1904)																				Cryptogenic
	Present Study				x	x	x			x	x	x	x	x						
<i>Neodexiospira nipponica</i> Okuda, 1934																				Cryptogenic
	Present Study					x								x						
<i>Neodexiospira</i> sp.																				
	Present Study										x									
<i>Nidificaria</i> cf. <i>dalestraughnae</i> (Vine, 1972)																				
	Present Study							x	x											

<i>Pileolaria militaris</i> Claparede, 1868														Introduced			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
										x			x				
<i>Simplicaria pseudomilitaris</i> (Thiriot-Quievreux, 1965)														Cryptogenic			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x											
Spirorbidae (sp. 1)																	
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x											
<i>Spirorbis</i> sp.																	
Neighb. Isl. Consult. 1973	Year 1972	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x
<i>Vinearia</i> sp.																	
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x											
Family: SYLLIDAE																	
Unid. Syllidae																	
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Family: TERESELLIDAE																	
<i>Loimia medusa</i> (Savigny, 1818)																	
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993		x		x								x		x		
AECOS 2000	2000															x	
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003	x		x													
<i>Neoamphritrite</i> sp.																	
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1996	x								x	x						
<i>Nicolea gracilibranchis</i> (Grube, 1878)																	
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1996		x													x	
<i>Nicolea</i> sp.																	
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1997											x			x		
<i>Polycirrus</i> sp.																	
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1997											x	x				
Terebellidae (sp. 1)																	
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x				x	x						
<i>Thelepus setosus</i> (Quatrefages, 1865)																	
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972	x				x				x	x		x				x
DeFelice, unpub. Ed. Grant	1996	x															
DeFelice, unpub. Ed. Grant	1997												x				

Unid. Terebellidae (juv.)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x	x								
Class: HIRUDINIDA																		
Family: PISCICOLIDAE																		
<i>Stibarobdella macrothela</i> (Schmarda, 1861)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x				
Phylum: SIPUNCULA																		
Class: SIPUNCULIDEA																		
Order: SIPUNCLULIFORMES																		
Family: SIPUNCULIDAE																		
<i>Sipunculus</i> sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977		1977																x
Phylum: MOLLUSCA																		
Class: GASTROPODA																		
Subclass: PROSOBRANCHIA																		
Order: ARCHAEOGASTROPODA																		
Family: FISSURELLIDAE																		
<i>Diodora</i> cf. <i>octogona</i> (Reeve, 1850)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x	x
<i>Diodora granifera</i> (Pease, 1861)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x											
<i>Diodora octogona</i> (Reeve, 1850)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x	x				x	x	x	x					
Family: NERITIDAE																		
<i>Nerita picea</i> (Recluz, 1841)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x					x	x							
Neighb. Isl. Consult. 1973		1972																x
Cheney et al., 1977		1977														x		
Dept. of the Army, 1980		1979											x	x				
Brewer & Assoc. 1987		1987											x					
BPBM-MO 64254		1988											x					
Army Corps of Engin. 1994		1993														x		
AECOS 2000		2000															x	
Coles and Longenecker 2003		2003	x		x													
<i>Nerita polita</i> Linnaeus, 1758		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977		1977															x	
<i>Nerita</i> sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Sunn et al. 1977		1977																x

Family: PATELLIDAE

***Cellana exarata* (Reeve, 1854)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x													
Dept. of the Army, 1980	1979												x				
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
Coles and Longenecker 2003	2003	x															

***Cellana sandwicensis* (Pease, 1861)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977																x
Coles and Longenecker 2003	2003			x													

***Patella undato-lirata* Reeve, 1854**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 64580 (as <i>Cellana undata lirata</i>)	1931												x				

Family: PHASIANELLIDAE

***Tricolia (Hiloa) variabilis* (Pease, 1861)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x				x					x	x	x		x	

Family: PHENACOLEPADIDAE

***Phenacolepas scobinata* (Gould, 1859)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

Family: SCISSURELLIDAE

***Scissurella pseudoequatoria* Kay, 1979**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x		x										

Family: SKENEIDAE

***Lophocochlias minutissimus* (Pilsbry, 1921)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

Family: STOMATELLIDAE

***Synaptocochlea concinna* (Gould, 1845)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												

Family: TROCHIDAE

***Alcyna ocellata* Hickman & McLean, 1995**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x			x						x		x	x

***Alcyna subangulata* Hickman & McLean, 1995**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study													x				

***Euchelus gemmatus* (Gould, 1845)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x	x			x			x	x				

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

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														

Trochus intextus Kiener, 1850

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x							x	x	x	
Cheney et al., 1977	1977													x			

Family: TURBINIDAE

Collonista candida (Hickman & McLean, 1995)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																x	

Leptothyra rubricincta (Mighels, 1845)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x			x	x	x				x	x	x	x	x	

Leptothyra sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														

Leptothyra verruca (Gould, 1845)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x	x		x						x			

Turbo sandwicensis Pease, 1861

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study															x		
U.S. F&WS 1993	1993											x					

Turbo sp. (juv.)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

Order: NEOTAENIOGLOSSA

Suborder: DISCOPODA

Family: BARLEEIDAE

Barleeia cf. calcarea Kay, 1979

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

Family: CAECIDAE

Caecum arcuatum de Folin, 1867

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x		x	x				x	x	x			x

Family: CALYPTRAEIDAE

Cheilea equestris (Linnaeus, 1758)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												

Crepidula aculeata (Gmelin, 1791)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x	x				x	x	x	x		x	x	x
BPBM-MO 266652	2002		x														
Coles and Longenecker 2003	2003		x														

Introduced**Crucibulum spinosum (Sowerby, 1824)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x	x								x		x

Introduced

Family: CAPULIDAE

***Amathina bicarinatus* (Pease, 1861)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x					x				x				

Family: CASSIDAE

***Cassia cornuta* (Linnaeus, 1758)**

Army Corps of Engin. 1994	Year 1993	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Family: CERITHIIDAE

***Bittium impendens* (Hedley, 1899)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x		x		x	x						x		x	

***Bittium parcum* (Gould, 1861)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x			x	x										

***Bittium zebrum* (Kiener, 1841)**

Bigelow et al. 1989	Year 1988	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
								x									

***Cerithium boeticum* Pease, 1860**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x											

***Cerithium cf. atromarginatum* Dautzenberg & Bouge, 1933**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x	x					x		x			

***Cerithium echinatum* Houbrick, 1992**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
								x									

***Cerithium egeum* Gould, 1849**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
								x				x					

***Cerithium interstriatum* Sowerby, 1855**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x			x	x		x									x

***Cerithium nesioticum* Pilsbry & Vanatta, 1905**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x						x					

***Cerithium rostratum* Sowerby, 1855**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
												x					

***Cerithium zebrum* Kiener, 1841**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x										x		

***Rhinoclavis articulata* (Adams & Reeve, 1850)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Rhinoclavis sinensis (Gmelin, 1791)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993						x	x					x				

Family: CINGULOPSIDAE

Rufodardanula conica Kay, 1979

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x		x												

Rufodardanula ponderi Kay, 1979

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
															x		

Rufodardanula sp.

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Family: CYPRAEIDAE

Cypraea caputserpentis Linnaeus, 1758

Army Corps of Engin. 1994	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993														x		
AECOS 2000	2000											x					x

Cypraea carneola Linnaeus, 1758

U.S. F&WS 1993	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1993												x				

Cypraea chinensis Gmelin, 1791

Butler 1977	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	1974											x					
BPBM-MO 265434	2000																x
	N/A											x					

Cypraea cicercula Linnaeus, 1758

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Cypraea fimbriata Gmelin, 1791

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x												

Cypraea gaskoini Reeve, 1846

BPBM-MO 265781	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1916												x				

Cypraea granulata Pease, 1863

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x														x

Cypraea helvola Linnaeus, 1758

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x										x				

Cypraea isabella Linnaeus, 1758

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993							x									x
												x					

Cypraea leviathan Schilder & Schilder, 1938

Butler 1975	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1975												x				

Cypraea maculifera Schilder, 1932

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977		x											x			

Cypraea mauiensis Burgess, 1967

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x											

Cypraea sp. (juv.)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
									x								

Cypraea tabescens Dillwyn, 1817

BPBM-MO 62355	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1992												x				

Cypraea talpa Linnaeus, 1758

Butler 1975	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1975												x				

Cypraea tessellata Swainson, 1822

Butler 1977	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Butler 1975	1974													x			
	1975													x			

Cypraea tigris Linnaeus, 1758

BPBM-MO 266448	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 266447	1960		x														
Army Corps of Engin. 1994	1960		x														
	1993													x			

Family: DIALIDAE

Cerithidium diplax (Watson, 1886)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x												

Cerithidium perparvulum (Watson, 1886)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x		x		x	x									

Diala semistriata (Philippi, 1845)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x		x			x				x					

Family: ERATOIDAE

Erato sandwicensis Pease, 1860

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Family: HIPPONICIDAE

Hipponix (Antisabia) foliaceus (Quoy & Gaimard, 1835)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977			x								x		x		x	
(as <i>Hipponix foliatus</i>)														x			

Hipponix (Pilosabia) pilosus (Deshayes, 1832)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977	x	x	x		x						x	x	x	x	x	
														x			

		Cryptogenic															
	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
<i>Hipponix australis</i> (Lamarck, 1819)																	
Present Study					x			x									
<i>Hipponix</i> sp.																	
Neighb. Isl. Consult. 1973	1972																x
AECOS 2000	2000														x		
<i>Hipponix</i> spp. (juv.)																	
Present Study														x	x		
Family: LITTORINIDAE																	
<i>Littoraria pintado</i> (Wood, 1828)																	
Present Study		x		x		x			x					x		x	
BPBM-MO 68596	1930	x															
Neighb. Isl. Consult. 1973	1972																x
Cheney et al., 1977 (as <i>Littorina pintado</i>)	1977														x		
Dept. of the Army, 1980	1979											x	x				
Brewer & Assoc. 1987	1987											x					
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993														x		
AECOS 2000	2000															x	
Coles and Longenecker 2003	2003	x		x													
<i>Littoraria scabra</i> (Linnaeus, 1758)																	
Present Study		x															
Cheney et al., 1977 (as <i>Littorina scabra</i>)	1977														x		
Brewer & Assoc. 1987	1987												x				
AECOS 1992	1991	x															
<i>Littoraria</i> sp.																	
Sunn et al. 1977	1977																x
<i>Littoraria undulata</i> (Gray, 1839)																	
Present Study					x												
<i>Nodilittorina picta</i> Philippi, 1846																	
Present Study					x												
BPBM-MO 68598 (as <i>Littorina picta</i>)	1930	x															
BPBM-MO 68597 (as <i>Littorina picta</i>)	1930	x															
Coles and Longenecker 2003	2003				x												
Family: MODULIDAE																	
<i>Modulus tectum</i> (Gmelin, 1791)																	
Present Study																	x
Family: NATICIDAE																	
<i>Natica</i> sp. (juv.)																	
Present Study						x											

Family: OBTORTIONIDAE

***Finella pupoides* Adams, 1860**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Family: PLANAXIDAE

***Planaxis suturalis* Smith, 1872**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x		x												

Family: PLESIOTROCHIDAE

***Plesiotrochus luteus* (Gould, 1861)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
									x								

Family: RANELLIDAE

***Charonia tritonis* (Linnaeus, 1767)**

Army Corps of Engin. 1994	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	1993														x		
	2000															x	

***Cymatium (Gutturium) gutturnium* (Röding, 1798)**

Butler 1975	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1975												x				

***Cymatium (Septa) intermedius* (Pease, 1869)**

U.S. F&WS 1993	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1993												x				

***Cymatium (Septa) pileare* (Linnaeus, 1758)**

U.S. F&WS 1993	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1993												x				

***Gyrineum pusillum* (Broderip, 1832)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Family: RASTODENTIDAE

***Rastodens brevilabiosa* Kay, 1979**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x														

Family: RISSOIDAE

***Merelina granulosa* (Pease, 1862)**

Dept. of the Army, 1980	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1979												x				

***Merelina hewa* Kay, 1979**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x		x		x							x		x	

***Merelina* sp.**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x											

***Parashiela beetsi* Ladd, 1966**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x		x										

<i>Pusillina (Haurakia) marmorata</i> (Hedley, 1907)																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
			x		x			x				x			x		x			
<i>Pyramidelloides</i> sp.																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
								x												
<i>Rissoina (Apataxia) cerithiiformis</i> Tryon, 1887																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
		x	x	x	x	x	x	x	x			x	x	x	x	x				
<i>Rissoina ambigua</i> (Gould, 1849)																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
												x	x	x			x			
<i>Rissoina costata</i> Adams, 1851																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
																				x
<i>Sansonina kenneyi</i> (Ladd, 1966)																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
						x														
<i>Schwartziella ephamilla</i> Ponder, 1985																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
			x				x	x				x	x	x						
<i>Schwartziella triticea</i> Pease, 1861																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
			x																	
<i>Stosicia hiloense</i> (Pilsbry & Vanatta, 1908)																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
					x		x	x												
<i>Zafra</i> sp.																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
					x															
<i>Zebina</i> sp.																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
								x												
<i>Zebina tridentata</i> (Michaud, 1830)																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
					x															
Family: STROMBIDAE																				
<i>Strombus maculatus</i> Sowerby, 1842																				
Cheney et al., 1977	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
																				x
Family: TRIVIIDAE																				
<i>Trivia hordacea</i> Kiener, 1845																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
																				x
Family: VERMETIDAE																				
<i>Dendropoma platypus</i> Mörch, 1861																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
																				x

<i>Dendropoma</i> spp.																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
		x	x						x						x	x	x		
<i>Eualetes tulipa</i> (Chenu, 1843)																			Introduced
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
AECOS 2000	2000	x				x		x	x	x	x	x	x						x
															x				x
<i>Petalococonchus</i> cf. <i>keenae</i> Hadfield & Kay, 1972																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
		x	x	x	x	x	x	x	x	x	x		x						x
<i>Petalococonchus</i> sp.																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
			x																
<i>Serpulorbis variabilis</i> Hadfield & Kay, 1972																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
Coles and Longenecker 2003	2003							x		x	x	x	x	x	x	x	x		
Coles et al. 2004	2003	x																	
												x		x					x
Unid. Vermetidae spp.																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
							x				x	x		x	x				x
Suborder: PTENOGLOSSA																			
Family: CERITHIOPSIDAE																			
<i>Cerithiopsis</i> cf. <i>arga</i> Kay, 1979																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
				x		x			x				x						
Unid. Cerithiopsidae																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
			x																
Family: EULIMIDAE																			
<i>Balcis acanthyllis</i> (Watson, 1886)																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
					x		x	x	x										
<i>Balcis aciculata</i> (Pease, 1861)																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
					x														
<i>Balcis brunniculata</i> Kay, 1979																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
																	x		
<i>Balcis</i> cf. <i>kanaka</i> (Pilsbry, 1917)																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
				x	x	x								x					
<i>Balcis conoidalis</i> (Sowerby, 1865)																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
						x													
<i>Balcis</i> sp.																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
		x	x										x				x		

<i>Eulima metcalfei</i> (Adams, 1853)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x				x	x				
<i>Scalenostoma carinata</i> Deshayes, 1863	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x			
Family: LITIOPIDAE																	
<i>Styliferina goniochila</i> (Adams, 1860)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x				x	x			x		x	x	x	
Family: TRIPHORIDAE																	
<i>Cautor intermissa</i> (Laseron, 1958)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
<i>Iniforis cf. aemulans</i> (Hinds, 1843)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x	x	x	x				x		x		x	
<i>Iniforis hinuhinu</i> Kay, 1979	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									
<i>Iniforis sp.</i>	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
<i>Mastonia cingulifera</i> (Pease, 1861)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x										x
<i>Metaxia brunnicephala</i> Kay, 1979	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x				x			x					
<i>Metaxia sp.</i>	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									
<i>Triphora bicolor</i> (Pease, 1868)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
<i>Triphora cf. earlei</i> Kay, 1979	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									
<i>Triphora cf. pallida</i> (Pease, 1871)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x	x								
<i>Triphora cf. peasei</i> (Joussemae, 1884)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
<i>Triphora coralina</i> (Laseron, 1958)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x										x

<i>Triphora peasi</i> (Jousseume, 1884)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x			x									
<i>Triphora</i> spp.	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x										
Unid. Triphorinae spp.	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x	x		x				x					
<i>Viriola abbotti</i> (Baker & Spicer, 1935)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																x	
<i>Viriola cf. elongata</i> (Laseron, 1958)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study													x				
<i>Viriola fallax</i> Kay, 1979	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x		x	x	x			x		x		x	
<i>Viriola incisa</i> (Pease, 1861)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												
Suborder: HETEROPODA																	
Family: PTEROTRACHEIDAE																	
<i>Pterotrachea coronata</i> Niebuhr, 1775	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 61936 (as <i>Pinaxia coronata</i>)	1968												x				
Order: NEOGASTROPODA																	
Family: BUCCINIDAE																	
<i>Caducifer decapitata</i> (Reeve, 1844)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x				x			x	x	
<i>Caducifer nebulosa</i> (Gould, 1860)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																x	
<i>Engina cf. albocincta</i> Pease, 1860	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									
Family: COLUMBELLIDAE																	
<i>Euplica livescens</i> (Reeve, 1859)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																x	
<i>Euplica varians</i> (Sowerby, 1832)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											
<i>Mitrella loyaltensis</i> (Hervier, 1900)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x		x	x	x	

<i>Mitrella margarita</i> (Reeve, 1859)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study																x	x		
<i>Mitrella rorida</i> (Reeve, 1859)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study																x			
<i>Seminella peasei</i> (von Martens & Langkaval, 1871)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study													x	x					
<i>Seminella</i> sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study			x													x			
Unid. Columbellidae		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study						x													
Family: CONIDAE																			
<i>Conus abbreviatus</i> Reeve, 1843		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study													x						
Cheney et al., 1977		1977													x				
<i>Conus ebraeus</i> Linnaeus, 1758		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Cheney et al., 1977		1977														x			
<i>Conus flavidus</i> Lamarck, 1810		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study													x						
Cheney et al., 1977		1977														x			
U.S. F&WS 1993		1993											x						
Coles et al. 2004		2003											x						
<i>Conus leopardus</i> (Röding, 1798)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study													x						
Coles et al. 2004		2003											x						
<i>Conus lividus</i> Hwass, 1792		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study						x													
Neighb. Isl. Consult. 1973		1972																x	
U.S. F&WS 1993		1993											x						
<i>Conus marmoreus</i> Linnaeus, 1758		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study													x						
<i>Conus miles</i> Linnaeus, 1758		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study				x				x											
<i>Conus miliaris</i> Hwass, 1792		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
BPBM-MO 68931		1930	x																
<i>Conus moreletii</i> Crosse, 1858		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study				x				x									x		

Conus pulicarius Hwass, 1792

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977											x			x		

Conus quercinus Lightfoot, 1786

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977				x										x		

Conus rattus Hwass, 1792

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 60819	1971		x										x				

Conus sp.

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles et al. 2004	2003											x				x	

Conus sponsalis Hwass, 1792

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977		x												x		

Conus striatus Linnaeus, 1758

BPBM-MO 60871	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1972												x				

Conus suturatus Reeve, 1844

Butler 1977	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1975												x				

Conus textile Linnaeus, 1758

BPBM-MO 60883	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	1971												x				

Family: CORALLIOPHILIDAE

Coralliophila bulbiformis (Conrad, 1837)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
															x		

Coralliophila cf. volacea (Kiener, 1836)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x	

Coralliophila costularis Linnaeus, 1758

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x														

Coralliophila erosa (Röding, 1798)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
															x		

Coralliophila violacea (Kiener, 1836)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
													x				

Quoyula madreporarum (Sowerby, 1834)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
													x				

<i>Volvarina fusiformis</i> (Hinds, 1844)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x	x				
Family: MITRIDAE																	
<i>Mitra (Mitra) incompta</i> (Solander, 1786)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x					
<i>Mitra (Nebularia) aurora aurora</i> Dohrn, 1861	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993											x					
<i>Mitra (Nebularia) fulvecens</i> Broderip, 1836	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												
<i>Mitra (Nebularia) luctuosa</i> Adams, 1853	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study															x		
<i>Mitra (Nebularia) sp.</i>	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study															x		
<i>Mitra (Strigatella) assimilis</i> Pease, 1868	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x					x	x					
<i>Mitra (Strigatella) litterata</i> (Lamarck, 1811)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study															x		
<i>Mitra (Strigatella) saltata</i> Pease, 1865	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study															x	x	
<i>Mitra (Strigatella) typha</i> Reeve, 1845	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																x	
<i>Mitra adusta</i> Lamarck, 1811	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 61391	N/A											x					
<i>Mitra astricta</i> Reeve, 1844	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 61444	1972											x					
<i>Mitra auriculoides</i> Reeve, 1845	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 61456	1971											x					
<i>Neocancilla clathrus</i> (Gmelin, 1791)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																x	
<i>Pterygia crenulata</i> (Gmelin, 1791)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 238620	N/A											x					
<i>Pterygia fenestrata</i> (Lamarck, 1811)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 238619	1963											x					

Unid. Mitrinae

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
											x					x

Family: MURICIDAE

***Favartia garrettii* (Pease, 1869)**Present Study
U.S. F&WS 1993

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x							x							
1993											x					

Unid. Muricidae (juv.)

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
											x					

Family: NASSARIIDAE

***Nassarius crematus* (Hinds, 1844)**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x

***Nassarius dermistina* (Gould, 1860)**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
											x					x

***Nassarius* sp.**Cheney et al., 1977
(as *Nassarius reeveanus*)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
1977																x

Family: TEREBRIDAE

***Duplicaria gouldi* (Deshayes, 1857)**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x

***Duplicaria thaanumi* (Pilsbry, 1921)**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x

***Hastula aciculina* Lamarck, 1822**BPBM-MO 60709
(as *Terebra aciculina*)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
1953																x

***Hastula penicillata* (Hinds, 1844)**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x

***Terebra affinis* Gray, 1834**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x

***Terebra* cf. *kilburni* Burch, 1965**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x

***Terebra columellaris* Hinds, 1844**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x

***Terebra crenulata* (Linnaeus, 1758)**

Cheney et al., 1977

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
1977																x

<i>Terebra guttata</i> (Röding, 1798)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x									
Butler 1975		1975											x					
<i>Terebra maculata</i> (Linnaeus, 1758)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																		x
<i>Terebra</i> sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 60729		N/A											x					
Family: THAIDIDAE																		
<i>Drupa tuberculata</i> (de Blainville, 1832)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 68801 (as <i>Morula tuberculata</i>)		1930	x															
<i>Drupella elata</i> Blainville, 1832		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x	x		x							x		x	
<i>Drupella ochrostoma</i> (de Blainville, 1832)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x							x	x	
<i>Maculotriron</i> sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977 (as <i>Maculotriron serriale</i>)		1977													x			
<i>Morula</i> cf. <i>dumosa</i> (Conrad, 1837)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																		x
<i>Morula</i> cf. <i>foliacea</i> (Conrad, 1837)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x		x												x
<i>Morula foliacea</i> (Conrad, 1837)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 62067 (as <i>Drupa foliacea</i>)		1972											x					
<i>Morula granulata</i> (Duclos, 1832)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993		1993												x				
<i>Morula morus borealis</i> Pilsbry, 1904		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 68802 (as <i>Morula morus</i>)		1930	x															
<i>Morula</i> sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x						x			
Neighb. Isl. Consult. 1973		1972																x
Coles et al. 2004		2003																x
<i>Morula uva</i> (Röding, 1798)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x						x			x	x	
Cheney et al., 1977		1977												x				

<i>Neothais harpa</i> (Conrad, 1837)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977 (as <i>Purpura harpa</i>)	1977													x			
Unid. Thaididae	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x								x
Family: TURRIDAE																	
<i>Carinapex minutissima</i> (Garret, 1873)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x		x	x	x			x		x	x		
<i>Clavus (Tylotiella) mighelsi</i> Kay, 1979	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x								
<i>Clavus (Tylotiella) pusilla</i> (Garret, 1873)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x								
<i>Daphnella ornata</i> (Hinds, 1844)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x			
<i>Etrema cf. acricula</i> Hedley, 1922	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x	x												
<i>Lienardia mighelsi</i> Iredale & Tomlin, 1917	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x					x			x		
<i>Lovellona peaseana</i> Finlay, 1927	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												
<i>Microdaphne trichodes</i> (Dall, 1919)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
<i>Mitrolumna cf. iki</i> Kay, 1979	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
<i>Mitrolumna metula</i> (Hinds, 1843)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x			x					x
<i>Tritonoturris</i> sp.	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												
<i>Turridrupa albofasciata</i> (Smith, 1877)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x			x					
<i>Turridrupa bijubata</i> (Reeve, 1843)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

<i>Turridrupa consobrina</i> Powell, 1967	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 8914	N/A													x			
Order: HETEROSTROPHA																	
Family: ARCHITECTONICIDAE																	
<i>Torinia variegata</i> Gmelin, 1791	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 63713	1971													x			
Family: OMALOGYRIDAE																	
<i>Omalogyra japonica</i> (Habe, 1972)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
Family: ORBITESTELLIDAE																	
<i>Orbitestella regina</i> Kay, 1979	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x			x
Family: PYRAMIDELLIDAE																	
<i>Herviera gliriella</i> (Melvill & Standen, 1896)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											
<i>Herviera patricia</i> Pilsbry, 1918	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x												
<i>Hinemoa indica</i> (Melvill, 1896)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	Introduced
												x	x				
<i>Miralda paulbartschi</i> Pilsbry, 1921	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														
<i>Odostomia cf. margarita</i> Pilsbry, 1944	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study											x	x					
<i>Odostomia cf. stearnsiella</i> Pilsbry, 1918	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x	x		
<i>Pyramidella sulcata</i> Adams, 1854	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
ORCA 1981	1981																x
<i>Turbonilla (Mormula) cornelliana</i> (Newcomb, 1870)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
<i>Turbonilla lirata</i> (Adams, 1855)	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
Unid. Pyramidellidae	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study											x						

Family: RISSOELLIDAE

***Rissoella cf. confusa confusa* Ponder & Yoo, 1977**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x			x	x	x	x								x

***Rissoella cf. longispira* Kay, 1979**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x	x	x						x			x	

Subclass: OPISTHOBANCHA

Order: CEPHALASPIDEA

Unid. Cephalaspidea (juv.)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x			x		x		x	x	x	x		

Family: ACTEONIDAE

***Pupa pudica* (Adams, 1854)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x			

Family: APLUSTRIDAE

***Hydatina amplustra* (Linnaeus, 1758)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study													x				

***Hydatina* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

***Micromelo guamensis* (Quoy & Gaimard, 1825)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x									x					

Family: BULLIDAE

***Bulla vernicosa* Gould, 1859**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study										x			x			x	

Family: HAMINEIDAE

***Atys debilis* Pease, 1860**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study															x		

***Atys semistriata* Pease, 1860**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x							x				

***Haminea* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study										x		x	x				x

Family: SCAPHANDRIDAE

***Acteocina hawaiiensis* Pilsbry, 1921**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study													x				

Order: ANASPIDEA

Family: APLYSIIDAE

***Dolabella cf. auricularia* (Lightfoot, 1786)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

***Notarchus indicus* Schweigger, 1820**

Cheney et al., 1977 (as <i>Notarchus lineolatus</i>)	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

***Stylocheilus cf. longicaudus* (Quoy & Gaimard, 1824)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
											x		x	x			

***Tambja morosa* (Bergh, 1877)**

Coles and Longenecker 2003	Year 2003	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x													

Unid. Aplysiinae

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Order: SACOGLOSSA

Family: JULIIDAE

***Julia exquisita* Gould, 1862**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x								x	x	x	

Family: OXYNOEIDAE

***Lobiger souverbiei* Fisher, 1856**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x											

Order: NUDIBRANCHIA

Family: AEOLIDAE

Unid. Aeolidae

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x						x							

Family: CHROMODORIDIDAE

***Chromodoris aspersa* (Gould, 1852)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x															

***Chromodoris cf. decora* (Pease, 1860)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x															

***Chromodoris* sp.**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x													x		

***Chromodoris vibrata* (Pease, 1860)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
										x							

Chromodoris youngbleuthi Kay & Young, 1969

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study										x		x					

Glossodoris cf. rufomarginata (Bergh, 1890)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x							x						x		

Glossodoris rufomarginata (Bergh, 1890)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles and Longenecker 2003	2003			x													

Hypselodoris infurcata (Rüppell & Leukart, 1828)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	2000															x	

Hypselodoris sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x													

Risbecia imperialis (Pease, 1860)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles and Longenecker 2003	2003	x															

Family: DENDRODORIDIDAE

Dendrodoris sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																x	

Family: DORIDIDAE

Trippa sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x	x				

Unid. Dorididae

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x													

Family: FACELINIDAE

Facelinella semidecora (Pease, 1860)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											

Family: PHYLLIDIIDAE

Phyllidia pustulosa

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x										
Coles et al. 2004	2003							x									

Phyllidia varicosa Lamarck, 1801

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x												
Coles et al. 2004	2002					x											

Family: PTERAEOLIDIDAE

Pteraeolidia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study											x						

Subclass: PULMONATA

Order: BASOMMATOPHORA

Family: SIPHONARIIDAE

***Siphonaria normalis* Gould, 1846**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x					x	x	x			x			x
Neighb. Isl. Consult. 1973	1972																x
Cheney et al., 1977	1977													x			
Brewer & Assoc. 1987	1987											x					
AECOS 2000	2000																x

***Williamia radiata* (Pease, 1861)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x	x	x	x	x					x	x	x	x

***Zafra hervieri* (Pace, 1902)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study															x		

Class: BIVALVIA

Family: ANOMIIDAE

***Anomia nobilis* Reeve, 1859**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Introduced
Present Study		x								x	x							
Neighb. Isl. Consult. 1973	1972																	x

Family: ARCIDAE

***Arca ventricosa* Lamarck, 1819**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x	x							x	x		x	x	
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
Coles and Longenecker 2003	2003	x		x													
Coles et al. 2004	2003											x					

***Barbatia (Acar) divaricata* (Sowerby, 1833)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x		x				x			x	x	x		x	

***Barbatia alia* (Dall, Bartsch & Rehder, 1938)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993											x					

***Barbatia decussata* (Sowerby, 1823)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					

***Barbatia nuttingi* (Dall, Bartsch & Rehder, 1938)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x	x			x					x			

Family: CARDIIDAE

***Trachycardium orbita* (Sowerby, 1833)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-MO 60470 (as <i>Cardium orbita</i>)	1972											x					
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					

Family: CHAMIDAE

***Chama cf. fibula* Reeve, 1846** Year Ka1 Ka2 Ka3 Ka4 Mo1 Mo2 Mo3 Mo4 Ma1 Ma2 Ma3 Ma4 Ha1 Ha2 Ha3 Ha4 **Cryptogenic**
 U.S. F&WS 1993 1993 x

***Chama fibula* Reeve, 1846** Year Ka1 Ka2 Ka3 Ka4 Mo1 Mo2 Mo3 Mo4 Ma1 Ma2 Ma3 Ma4 Ha1 Ha2 Ha3 Ha4 **Cryptogenic**
 Present Study x x

***Chama iostoma* Conrad, 1837** Year Ka1 Ka2 Ka3 Ka4 Mo1 Mo2 Mo3 Mo4 Ma1 Ma2 Ma3 Ma4 Ha1 Ha2 Ha3 Ha4
 BPBM-MO 60399 1971 x

***Chama* sp.** Year Ka1 Ka2 Ka3 Ka4 Mo1 Mo2 Mo3 Mo4 Ma1 Ma2 Ma3 Ma4 Ha1 Ha2 Ha3 Ha4
 Present Study x x x

Family: CONDYLOCARDIIDAE

***Carditella hawaiiensis* Dall, Bartsch & Rehder, 1938** Year Ka1 Ka2 Ka3 Ka4 Mo1 Mo2 Mo3 Mo4 Ma1 Ma2 Ma3 Ma4 Ha1 Ha2 Ha3 Ha4
 Present Study x x

Family: GASTROCHAENIDAE

***Gastrochaena (Rocellaria) oahuana* Dall, Bartsch & Rehder, 1938** Year Ka1 Ka2 Ka3 Ka4 Mo1 Mo2 Mo3 Mo4 Ma1 Ma2 Ma3 Ma4 Ha1 Ha2 Ha3 Ha4
 Present Study x x

***Gastrochaena* sp.** Year Ka1 Ka2 Ka3 Ka4 Mo1 Mo2 Mo3 Mo4 Ma1 Ma2 Ma3 Ma4 Ha1 Ha2 Ha3 Ha4
 Present Study x

Family: HIATELLIDAE

***Hiatella arctica* (Linnaeus, 1767)** Year Ka1 Ka2 Ka3 Ka4 Mo1 Mo2 Mo3 Mo4 Ma1 Ma2 Ma3 Ma4 Ha1 Ha2 Ha3 Ha4 **Introduced**
 Present Study x x x x x x x x x x x x x x

Family: ISOGNOMONIDAE

***Isognomon californicum* (Conrad, 1837)** Year Ka1 Ka2 Ka3 Ka4 Mo1 Mo2 Mo3 Mo4 Ma1 Ma2 Ma3 Ma4 Ha1 Ha2 Ha3 Ha4
 Present Study x x x x x x x x x x x
 Coles and Longenecker 2003 2003 x

***Isognomon cf. incisum* (Conrad, 1837)** Year Ka1 Ka2 Ka3 Ka4 Mo1 Mo2 Mo3 Mo4 Ma1 Ma2 Ma3 Ma4 Ha1 Ha2 Ha3 Ha4
 Present Study x x x x x x x x x

***Isognomon cf. legumen* (Gmelin, 1791)** Year Ka1 Ka2 Ka3 Ka4 Mo1 Mo2 Mo3 Mo4 Ma1 Ma2 Ma3 Ma4 Ha1 Ha2 Ha3 Ha4
 Present Study x x x x x x x x x

***Isognomon costellatum* Conrad, 1837** Year Ka1 Ka2 Ka3 Ka4 Mo1 Mo2 Mo3 Mo4 Ma1 Ma2 Ma3 Ma4 Ha1 Ha2 Ha3 Ha4
 Neighb. Isl. Consult. 1973 1972 x
 Cheney et al., 1977 1977 x

***Isognomon incisum* (Conrad, 1837)** Year Ka1 Ka2 Ka3 Ka4 Mo1 Mo2 Mo3 Mo4 Ma1 Ma2 Ma3 Ma4 Ha1 Ha2 Ha3 Ha4
 Cheney et al., 1977 1977 x

***Isognomon perna* (Linnaeus, 1767)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x		x				x		x	x			x	
U.S. F&WS 1993	1993											x					

***Isognomon* spp. (juv.)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x						x	x	x	x	x	x		

Family: LASAEIDAE

***Kellia hawaiiensis* Dall, Bartsch & Rehder, 1938**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x	x						x			x		x

***Kona symmetrica* (Pilsbry, 1921)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x													

***Lasaea hawaiiensis* Dall, Bartsch & Rehder, 1938**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study										x	x		x				

Family: LIMIDAE

***Lima parallela* Dall, Bartsch & Rehder, 1938**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study											x						

Family: LUCINIDAE

Unid. Lucinidae

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

Family: MACTRIDAE

***Mactra thaanumi* Dall, Bartsch & Rehder, 1938**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study													x				

Family: MALLEIDAE

***Malleus regula* (Forsskål, 1775)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x	x		x	x			x		x	x	x	
U.S. F&WS 1993	1993											x					

Family: MESODESMATIDAE

***Ervilia bisculpta* Gould, 1861**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												

***Rochefortina sandwichensis* Hayami & Kase, 1993**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x		x					x					

Family: MYTILIDAE

***Brachidontes crebristriatus* (Conrad, 1837)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x						x	x	x	x				x
Neighb. Isl. Consult. 1973	1972																x
Cheney et al., 1977	1977													x			
AECOS 1992	1991	x															
AECOS 2000	2000																x

***Crenella* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x	x		x	x								

***Lithophaga fasciola* Dall, Bartsch & Rehder, 1938**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x			x	x	x	x	x	x	x	x	x		x		

***Musculus aviarius* Dall, Bartsch & Rehder, 1938**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x						x	x	x	x				

***Mytilus* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

***Septifer bryanae* (Pilsbry, 1921)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x	x	x	x	x			x	x	x	x	x	
Neighb. Isl. Consult. 1973	1972																x

Unid. Mytilidae

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study									x								

Family: OSTREIDAE

***Crassostrea gigas* (Thunberg, 1793)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Dept. of the Army, 1980	1979												x				
U.S. F&WS 1993	1993											x					
AECOS 2000	2000														x		x
Coles et al. 2004	2003											x					

***Crassostrea* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x						x	x	x					
Coles and Longenecker 2003	2003	x		x													

***Dendostrea sandvicensis* (Sowerby, 1871)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x		x			x	x	x	x	x		x		x
Neighb. Isl. Consult. 1973 (as <i>Ostrea sandvicensis</i>)	1972																x
AECOS 2000	2000														x		
Coles and Longenecker 2003	2003			x													

***Ostrea* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x			x			x					

Unid. Ostreidae

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles et al. 2004	2003											x					

Unid. Ostreidae spp.

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x	x	x		x	x	x				x	x		x

Family: PECTINIDAE

***Chlamys* sp.**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
								x									

***Laevichlamys irregularis* (Sowerby, 1842)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x												

***Pecten waikikius* Dall, Bartsch & Rehder, 1938**

Butler 1975	Year 1975	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Unid. Pectinidae

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Family: PINNIDAE

***Pinna* cf. *muricata* Linnaeus, 1758**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

***Pinna muricata* Linnaeus, 1758**

Bigelow et al. 1989	Year 1988	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
								x									

Family: PROPEAMUSIIDAE

***Chlamydezza* spp.**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Family: PTERIIDAE

***Pinctada* cf. *margaritifera* (Linnaeus, 1758)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x	x			x				x	x	x	x		x		x

***Pinctada margaritifera* (Linnaeus, 1758)**

U.S. F&WS 1993	Year 1993	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles and Longenecker 2003	Year 2003																
Coles et al. 2004	Year 2003	x		x													x

***Pinctada radiata* (Leach, 1814)**

U.S. F&WS 1993	Year 1993	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

***Pinctada* spp. (juv.)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x		x	x								x

Unid. Pteriidae

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
							x	x		x	x	x					

Family: SPONDYLIDAE

***Spondylus cf. cuneus* Reeve, 1856**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4

***Spondylus hystrix* Reeve, 1856**

U.S. F&WS 1993	Year 1993	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4

***Spondylus linguafelis* Sowerby, 1847**

U.S. F&WS 1993	Year 1993	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4

***Spondylus* sp.**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Spondylus hawaiiensis</i>)	1972					x			x					x	x		x

***Spondylus tenebrosus* Reeve, 1856**

Army Corps of Engin. 1994	Year 1993	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4

***Spondylus violacescens* Lamarck, 1819**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	2000			x	x			x	x			x	x			x	x
Coles et al. 2004	2003																x

***Spondylus zonalis* Lamarck, 1819**

BPBM-MO 60309	Year 1972	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4

Family: TELLINIDAE

***Macoma (Scissulina) obliquilineata* (Gould, 1837)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4

***Quadrans palatum* (Iredale, 1929)**

Neighb. Isl. Consult. 1973 (as <i>Quidnipagus palatum</i>)	Year 1972	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977																

***Tellina scobinata* Linnaeus, 1758**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4

Family: VENERIDAE

***Lioconcha hieroglyphica* (Conrad, 1837)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993																
BPBM-MO 60455 (as <i>Cytherea hieroglyphica</i>)	N/A																

***Periglypta reticulata* (Linnaeus, 1758)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977																
U.S. F&WS 1993	1993																

Class: CEPHALOPODA
 Order: OCTOPODA
 Family: OCTOPODIDAE

***Octopus cyanea* Gray, 1849**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x	x											
AECOS 1992	1991	x															
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000														x		x
Coles et al. 2004	2002				x												

***Polypus* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Class: POLYPLACOPHORA
 Order: CHITONIDA
 Family: ACANTHOCHITONIDAE

***Acanthochiton* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

***Acanthochiton viridis* (Pease, 1872)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Family: ISCHNOCHITONIDAE

***Ischnochiton petaloides* (Gould, 1846)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x							x	x			x	x	x	x
Cheney et al., 1977	1977													x			
AECOS 2000	2000																x

Phylum: ARTHROPODA
 Class: INSECTA
 Order: HETEROPTERA
 Family: GERRIDAE

***Halobates* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977													x			

Phylum: ARTHROPODA
 Class: PYCNOGONIDA
 Order: PANTOPODA
 Family: AMMOTHEIDAE

***Ammothella stauromata* Child, 1982**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x													

Family: PHOXICHILIDIIDAE

***Anoplodactylus cf. projectus* Hilton, 1943**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x													

Anoplodactylus sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study					x														
Phoxichilidiidae sp. 1		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study					x														
Unid. Phoxichilidiidae (juv.)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study					x														
Class: MAXILLOPODA																			
Subclass: CIRRIPIEDIA																			
Order: THORACICA																			
Family: BALANIDAE																			
Balanus amphitrite Darwin, 1854		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Introduced
Present Study			x		x						x	x		x					
Neighb. Isl. Consult. 1973		1972																	x
DeFelice, unpub. Ed. Grant		1996	x		x														
DeFelice, unpub. Ed. Grant		1997									x								
Balanus eburneus Gould, 1841		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Introduced
Present Study					x														
AECOS 1992		1991	x																
DeFelice, unpub. Ed. Grant		1996	x																
AECOS 2000		2000																	x
Balanus hawaiiensis Pilsbry, 1916		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study					x														
Balanus reticulatus Utinomi, 1967		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Introduced
Present Study			x		x							x							x
DeFelice, unpub. Ed. Grant		1996	x		x														
DeFelice, unpub. Ed. Grant		1997									x								
AECOS 2000		2000																	x
Balanus sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Introduced
Present Study																			x
BPBM-B 306		1943									x								
Neighb. Isl. Consult. 1973		1972																	x
AECOS 2000		2000																	x
Coles and Longenecker 2003		2003	x																
Balanus trigonus Darwin, 1854		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
Present Study											x	x							x
DeFelice, unpub. Ed. Grant		1997									x								
Chelonibia patula (Ranzani, 1818)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
BPBM-B 307		1943									x								
BPBM-B-307		1943									x								
Tetraclita divisa (Nilsson-Cantell, 1921)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	
BPBM-B 480		N/A											x						

Tetraclita sp. 1

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x					x	x							

Tetraclita sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Family: CHTHAMALIDAE

Chthamalus proteus Dando & Southward, 1980

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Introduced
Present Study		x	x	x					x	x	x				x		x	
AECOS 1992	1991	x																
DeFelice, unpub. Ed. Grant	1996	x																
DeFelice, unpub. Ed. Grant	1997									x								
AECOS 2000	2000														x		x	
Coles and Longenecker 2003	2003	x		x														

Chthamalus sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Euraphia hembeli (Conrad, 1834)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study															x		

Nesochthamalus intertextus (Darwin, 1854)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x													

Class: OSTRACODA

Order: CLADOCOPA

Family: BAIRDIIDAE

Bairdia sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
DeFelice, unpub. Ed. Grant	1996	x															
DeFelice, unpub. Ed. Grant	1997									x		x	x				

Order: MYODOCOPIDA

Family: CYLINDROLEBERIDIDAE

Cylindroleberis n. sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x											x		
DeFelice, unpub. Ed. Grant	1996			x													
DeFelice, unpub. Ed. Grant	1997									x							

Parasterope gamma n. sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x						x	x	x	x				
DeFelice, unpub. Ed. Grant	1996			x													
DeFelice, unpub. Ed. Grant	1997									x							

Parasterope sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study											x						

Family: CYPRIDINIDAE

***Paravargula trifax* Kornicker, 1991**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x						x	x	x					
DeFelice, unpub. Ed. Grant	1996	x		x													
DeFelice, unpub. Ed. Grant	1997									x			x				

***Pterocypridina* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x					x	x	x						x
DeFelice, unpub. Ed. Grant	1996			x													
DeFelice, unpub. Ed. Grant	1997									x							

Unid. Cypridinidae spp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study										x							

Family: PHILOMEDIDAE

***Harbansus* n. sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												

Order: PODOCOPINA

Family: CYPRIDIDAE

***Cypridina* n. sp. 1**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x	x	x	x	x				x	x	x	x	x	x
DeFelice, unpub. Ed. Grant	1997											x					

***Cypridina* n. sp. 2**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
DeFelice, unpub. Ed. Grant	1997											x					

Class: MALACOSTRACA

Subclass: HOPLOCARIDA

Order: STOMATOPODA

Family: GONODACTYLIDAE

***Gonodactylaceus falcatus* (Forsskål, 1775)**

Introduced

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x				x			x	x					
DeFelice, unpub. Ed. Grant	1997									x							

***Gonodactylellus hendersoni* (Manning, 1967)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														

Family: PSEUDOSQUILLIDAE

***Pseudosquilla ciliata* (Fabricius, 1787)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Family: SQUILLIDAE

***Squilla* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977													x			

Subclass: EUMALACOSTRACA

Order: AMPHIPODA

Suborder: GAMMARIDEA

Family: AMPHILOCHIDAE

***Amphilochus menehune* Barnard, 1970**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x		x	x	x	x			x	x				

Family: AMPITHOIDAE

***Ampithoe kaneohe* Barnard, 1970**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x			x								

***Ampithoe ramondi* Audouin, 1826**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x			x			x	x		x	x			x	

***Ampithoe waialua* Barnard, 1970**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x			x	x	x	x			x		x	x	x	

***Cymadusa hawaiiensis* (Schellenberg, 1938)**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study											x				x	

***Paragrubia vorax* Chevreux, 1901**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x	x	x	x				x	x	x		x	

Family: ANAMIXIDAE

***Anamixis moana* Thomas, 1997**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x	x		x				x	x	x	x	x	

Family: AORIDAE

***Aoroides columbiae* Walker, 1898**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x								x	

***Aoroides nahili* Barnard, 1970**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x	x										

***Bemlos intermedius* Schellenberg, 1938**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x				

***Bemlos macromanus* Shoemaker, 1925**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x			x								

***Bemlos waipio* Barnard, 1970**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x		x	x	x	x	x	x	x	x	x	

***Lembos leapakahi* Barnard, 1970**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x						x		x	

Lembos sp. 1																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
												x		x					
Family: COLOMASTIGIDAE																			
Colomastix kapiolani Barnard, 1970																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
			x	x	x			x			x		x		x	x	x		
Colomastix lunailo Barnard, 1970																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
		x		x		x	x		x		x			x	x		x		
Colomastix pusilla Grube, 1864																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
		x		x		x	x	x	x		x			x	x		x		
Family: COROPHIIDAE																			
Cerapus sp.*																			Cryptogenic?
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
			x																
Corophium baconi Shoemaker, 1934																			Introduced
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
				x						x	x								
Ericthonius brasiliensis (Dana, 1853)																			Introduced
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
		x	x	x		x		x	x	x	x		x		x	x	x		
Family: DEXAMINIDAE																			
Paradexamine maunaloa Barnard, 1970																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
						x	x	x				x	x	x		x			
Family: EUSIRIDAE																			
Eusiroides diplonyx Walker, 1904																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
			x				x							x					
Pontogeneia pacifica Schellenberg, 1938																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
												x	x						
Family: ISAEIDAE																			
Chevalia aviculae Walker, 1904																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
			x	x	x		x	x	x			x	x			x			
Gammaropsis afra Stebbing, 1888																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
							x												
Gammaropsis alamoana Barnard, 1970																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
			x		x							x		x					
Gammaropsis atlantica Stebbing, 1888																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
			x		x	x	x	x	x					x	x	x	x		

Gammaropsis pali Barnard, 1970

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x														

Gammaropsis pokipoki Barnard, 1970

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
							x	x									

Photis aina Barnard, 1970

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x		x		x					x		x		x	

Photis hawaiiensis Barnard, 1955

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x		x						x	x	x	x				x

Cryptogenic**Photis kapapa** Barnard, 1970

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x	x		x	x	x	x		x			x		x

Family: ISCHYROCERIDAE

Ischyrocerus kapu Barnard, 1970

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x														

Jassa lilipuna Barnard, 1970

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
									x								

Leucothoe hyhelia Barnard, 1965

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x	x	x	x	x	x	x	x	x	x	x	x	x	x		x

Leucothoe lihue Barnard, 1970

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x														

Leucothoe micronesiae Barnard, 1965

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x		x											x		x

Leucothoe tridens Stebbing, 1888

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x	x	x	x		x			x	x	x			x	x	

Parajassa angularis Shoemaker, 1942

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Family: LEUCOTHOIDAE

Paraleucothoe flindersi (Stebbing, 1888)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-S-11293	1996	x	x	x		x		x	x	x	x		x		x		x
BPBM-S-11295	1996			x						x							

Introduced

Family: LILJEBORGIIDAE

Liljeborgia heeia Barnard, 1970

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x			x	x			x	x				

Liljeborgia laniloa Barnard, 1970

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																x

Family: LYSIANASSIDAE

Lysianassa ewa Barnard, 1970

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study	x			x					x	x						

Family: MELITIDAE

Ceradocus hawaiiensis Barnard, 1955

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x				x		x			

Elasmopus diplonyx Schellenberg, 1938

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x										

Elasmopus ecuadorensis hawaiiensis Schellenberg, 1938

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x				

Elasmopus hooheno Barnard, 1970

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x														

Elasmopus molokai Barnard, 1970

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x	x	x				x		x		x	

Elasmopus piikoi Barnard, 1970

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x		x						x			

Elasmopus rapax Costa, 1853

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x	x	x	x				x		x			

Introduced**Maera cf. hamigera** Haswell, 1879

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study											x	x				

Maera insignis (Chevreux, 1901)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x			x		x	x			x					

Maera pacifica Schellenberg, 1938

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study	x	x	x	x	x	x	x	x	x		x	x	x		x	x

Maera quadrimana (Dana, 1853)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x	x		x				x	x	x		x	

Maera serrata Schellenberg, 1938

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x	x	x					x	x	x			

Melita appendiculata (Say, 1818)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x											

<i>Melita pahuwai</i> Barnard, 1970																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
																				x
Family: OCHELESIDAE																				
Ochelesidae (sp. 1)*																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
						x														
Family: OEDICEROTODAE																				
<i>Ochlesis alii</i> Barnard, 1970																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
																				x
Family: PHLIANTIDAE																				
<i>Kanaloa manoa</i> Barnard, 1970																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
							x	x												
Family: PHLIANTIDAE																				
<i>Palinnotus alaniphlias</i> Barnard, 1970																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
																				x
Family: PODOCERIDAE																				
<i>Podocerus brasiliensis</i> Dana, 1853																				Introduced
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
																				x
Family: PODOCERIDAE																				
<i>Podocerus talaus lawai</i> (Barnard, 1970)																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
							x				x									
Family: STENOTHOIDAE																				
<i>Stenothoe gallensis</i> Walker, 1904																				Introduced
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
						x			x											x
Family: STENOTHOIDAE																				
<i>Stenothoe sp. 1</i>																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
									x											
Family: STENOTHOIDAE																				
<i>Stenothoe valida</i> Dana, 1853																				Cryptogenic
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
		x	x	x					x	x	x		x							
Family: TALITROIDAE																				
<i>Hyale honoluluensis</i> Schellenberg, 1938																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
						x	x													
Family: TALITROIDAE																				
<i>Hyale iole</i> Barnard, 1970																				
BPBM-S-7303	Year 1953	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
											x									
Family: TALITROIDAE																				
<i>Hyale waimea</i> Barnard, 1970																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
																				x

Suborder: CAPRELLIDEA

Family: CAPRELLIDAE

Caprella scaura Templeton, 1836

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Introduced

Hemiaegina minuta Mayer, 1890

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x		x	

Metaprotella snadalensis Mayer, 1890

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x		x	

Order: ISOPODA

Isopoda (sp. 1)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x											x				

Isopoda (sp. 2)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Isopoda (sp. 3)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x														

Isopoda (sp. 4)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x													

Suborder: ANTHURIDEA

Family: ANTHURIDAE

Anthuridae (sp. 1)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x					x									

Anthuridae (sp. 2)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x			x											

Apanthura inornata Miller & Menzies, 1952

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x				x	x	x			x	x		x		

Mesanthura hieroglyphica Miller & Menzies, 1952

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x												

Mesanthura n.sp.

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x	x	x	x	x				x	x		x	x		x

Family: PARANTHURIDAE

Paranthura bellicauda Miller & Menzies, 1952

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x												

***Paranthura ostergaardi* Miller & Menzies, 1952**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x			x								x			

Suborder: FLABELLIFERA

Family: CIROLANIDAE

***Cirolana parva* Hansen, 1890**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x		x					x	x	x			

Family: SPHAEROMATIDAE

***Neonaesa rugosa* Harrison & Holdich, 1982**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x	x	x	x	x			x	x	x	x	x	

***Paracerceis sculpta* Holmes, 1904**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Introduced
Present Study				x													

***Paradella diana** (Menzies, 1962)**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Cryptogenic
Present Study			x						x	x							

***Pistorius bidens** Harrison & Holdich, 1982**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Cryptogenic?
Present Study	x																

Pseudocerceis* sp.

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Cryptogenic?
Present Study					x			x		x							

***Sphaeroma walkeri* Stebbing, 1905**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																x

Suborder: ASELOTOTA

Family: JANIRIDAE

***Bagatus algicola* Miller, 1941**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x		x	x	x				x				

Family: JOEROPSIDAE

***Joeropsis hawaiiensis* Miller, 1941**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x		x	x	x	x	x	x	x			x	x

***Joeropsis* sp. 1**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x					x				x					x

Family: STENETRIIDAE

***Stenetrium medipacifica* Miller, 1941**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x		x	x	x			x	x	x			x

Suborder: VALVIFERA

Family: IDOTEIDAE

***Colidotea edmondsoni* Miller, 1940**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
								x								

Suborder: ONISCIDEA

Family: LIGIIDAE

***Ligia exotica* Roux, 1828**

DeFelice, unpub. Ed. Grant

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
1996	x															

Introduced

Order: TANAIDACEA

Suborder: APSEUDOMORPHA

Family: APSEUDIDAE

***Apseudes* n.sp.**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x							x		x		

***Apseudes tropicalis* Miller, 1940**

Present Study
BPBM-S 11304

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
1996	x							x			x			x	x	

***Parapseudes neglectus* Miller, 1940**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x

***Parapseudes pedispinis* Boone, 1923**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
							x									

Introduced

Family: PSEUDOZUXIDAE

***Leptocheilia dubia* Krøyer, 1842**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x	x		x		x		x	x	x	x	x	x	x	x

Cryptogenic

Family: TANAIDAE

***Anatanais insularis* Miller, 1940**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x		x				x	x	x	x	x			x

Tanaidae (sp. 1)

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x		x		x	x	x	x	x	x					x

Tanaidae (sp. 2)

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x		x						x				

Tanaidae (sp. 3)

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x	x	x								

***Tanais vanis* Miller, 1940**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x

Order: DECAPODA

Suborder: PLEOCYEMATA

Family: ALPHEIDAE

***Alpheus albatrossae* (Banner, 1953)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
							x			x		x	x				

***Alpheus brevipes* Stimpson, 1860**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x									x	x				

***Alpheus clypeatus* Coutiere, 1905**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
												x					

***Alpheus collumianus* Stimpson, 1860**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
													x				

***Alpheus lottini* Guerin, 1829**

Neighb. Isl. Consult. 1973	Year 1972	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

***Alpheus nanus* Banner, 1953**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x														

***Alpheus paracrinitus* Miers, 1881**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
												x			x		

***Alpheus paralentipes* Coutiere, 1905**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x				x					x	x		x

***Alpheus paralcycone* Coutiere, 1905**

Present Study DeFelice, unpub. Ed. Grant	Year 1997	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x		x					x			x	x		x		x

***Alpheus pugnax* Dana, 1852**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
									x					x			

***Alpheus* sp.**

Cheney et al., 1977	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
															x		

***Metalpheus paragracilis* Coutiere, 1897**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
									x							x	

***Metalpheus rostratipes* (Pocock, 1890)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

***Synalpheus bituberculatus* de Man, 1910**

Present Study DeFelice, unpub. Ed. Grant	Year 1996	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x		x						x	x						
		x															

Synalpheus paraneomeris Coutiere, 1905

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x										x		x	x		
DeFelice, unpub. Ed. Grant	1997											x					

Synalpheus streptodactylus Coutiere, 1905

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x							x	x	x	x	x		x		x
DeFelice, unpub. Ed. Grant	1996	x															

Synalpheus thai Banner & Banner, 1966

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study											x						

Family: BRESILIIDAE

Discias exul Kemp, 1920

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x			x	x	x							x	

Discias musicus* Holthuis, 1981

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x							x		

Cryptogenic?

Family: GNATHOPHYLLIDAE

Gnathophyllum americanum Guérin-Méneville, 1856

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS	1993											x					

Family: HIPPOLYTIDAE

Saron marmoratus (Olivier, 1811)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study															x	x	

Thor paschalis (Heller, 1862)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x	x									

Family: PALAEMONIDAE

Harpiliopsis beaupresii (Audouin, 1826)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											

Kemponia cf. amygone* (de Man, 1902)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									

Cryptogenic?

Kemponia elegans (Paulson, 1875)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x								x	x						x

Kemponia grandis (Stimpson, 1860)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study										x	x	x			x		x

Onyccaris quadratophthalma (Balss, 1921)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x													
BPBM-S 6072	N/A											x					

<i>Palaemon debilis</i> (Dana, 1852)																				
Cheney et al., 1977	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
														x						
<i>Palaemon pacificus</i> (Stimpson, 1860)																				
BPBM-S 3387	Year 1916	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
														x						
<i>Palaemonella lata</i> Kemp, 1922																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
				x				x	x	x				x	x	x				
<i>Palaemonella rotumana</i> (Borradaile, 1898)																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
				x						x	x	x	x							x
<i>Palaemonella tenuipes</i> Dana, 1852																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
														x						
<i>Periclimenaeus quadridentatus</i> (Rathubn, 1906)																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
			x	x					x		x	x	x							x
<i>Periclimenes galene</i>* Holthuis, 1952																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
																				Cryptogenic?
																				x
Unid. Palaemoninae																				
Sunn et al. 1973	Year 1973	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
		x																		
Family: PANDALIDAE																				
<i>Chlorocurtis</i> sp.																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
																				x
Family: PROCESSIDAE																				
<i>Clytomanningus coutierei</i> Nobili, 1904																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
					x									x						
<i>Nikoides multispinatus</i>* Hayashi, 1981																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
								x	x			x								Cryptogenic?
																				x
Family: STENOPODIDAE																				
<i>Stenopus hispidus</i> (Olivier, 1811)																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
AECOS 1992	1991	x								x				x						
Army Corps of Engin. 1994	1993														x					
AECOS 2000	2000																			x
Coles and Longenecker 2003	2003			x																
Suborder: REPTANTIA																				
Family: AETHRIDAE																				
<i>Actaeomorpha erosa</i> Miers, 1878																				
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4			
							x													

Family: CALAPPIDAE

***Calappa hepatica* (Linnaeus, 1758)**

Cheney et al., 1977	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

***Calappa* sp.**

BPBM-S-6686	Year 1959	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x													

***Mursia hawaiiensis* Rathbun, 1893**

BPBM-S-11260	Year 1967	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Family: CALLIANASSIDAE

***Callianassa* sp.**

Cheney et al., 1977	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Family: CARPILIIDAE

***Carpilius convexus* (Forsskål, 1775)**

Dept. of the Army, 1980 BPBM-S-6602	Year 1979 N/A	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
												x					
				x													

***Carpilius corallinus* (Herbst, 1783)**

U.S. F&WS 1993	Year 1993	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
												x					

***Carpilius maculatus* (Linnaeus, 1758)**

Brewer & Assoc. 1987 Army Corps of Engin. 1994 U.S. F&WS 1993	Year 1987 1993 1993	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
												x					
														x			
												x					

Family: CRYPTOCHIRIDAE

***Hapalocarcinus marsupialis* Stimpson, 1859**

Present Study Neighb. Isl. Consult. 1973 Cheney et al., 1977	Year 1972 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x													
																	x
														x			

Family: DIOGENIDAE

***Calcinus elegans* Milne Edwards, 1836**

Cheney et al., 1977	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

***Calcinus laevimanus* (Randall, 1839)**

Neighb. Isl. Consult. 1973 (as <i>Calcinus herbstii</i>) Cheney et al., 1977	Year 1972 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x
														x			

***Ciliopagurus strigatus* (Herbst, 1804)**

Neighb. Isl. Consult. 1973 (as <i>Aniculus strigatus</i>)	Year 1972	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

***Clibanarius zebra* (Dana, 1852)**

Cheney et al., 1977	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Family: DYNOMENIIDAE

***Dynomene hispida* Guerin-Meneville, 1832**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x														

Family: ENOPLOMETOPIDAE

Unid. Enoplometopidae

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x	

Family: GALATHEIDAE

Unid. Galatheidae

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x		x			x	x			x			x		

Family: GONEPLACIDAE

***Pseudozius caystrus* (Adams & White, 1848)**

Cheney et al., 1977	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

***Pseudozius inornatus* Dana, 1852**

BPBM-S 3384	Year 1916	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
												x					

Family: GRAPSIDAE

***Cyclograpsus henshawi* Rathbun, 1902**

BPBM-S 5142	Year N/A	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
												x					

***Grapsus grapsus* (Linnaeus, 1758)**

Cheney et al., 1977	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

***Grapsus tenuicrustatus* (Herbst, 1783)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972												x				x
(as <i>Grapsus grapsus tenuicrustatus</i>)																	
Dept. of the Army, 1980	1979										x	x					
Brewer & Assoc. 1987	1987										x						
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993										x						
AECOS 2000	2000														x		x

***Metopograpsus messor* (Forsskål, 1775)**

Neighb. Isl. Consult. 1973	Year 1972	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977													x			x

***Metopograpsus thukuhar* (Owen, 1893)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
										x							

***Pachygrapsus minutus* Milne Edwards, 1873**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x							x				x				

***Pachygrapsus planifrons* de Man, 1888**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x															

Family: PALINURIDAE

***Panulirus marginatus* (Quoy & Gaimard, 1825)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Sunn et al. 1973	1973	x															
Brewer & Assoc. 1987	1987											x					
Army Corps of Engin. 1994	1993														x		
U.S. F&WS 1993	1993												x				
Coles and Longenecker 2003	2003				x												

***Panulirus penicillatus* (Olivier, 1791)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
AECOS 1992	1991	x															
AECOS 2000	2000																x

***Panulirus* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Family: PANOPEIDAE

***Panopeus pacificus* Edmondson, 1931**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x						x								x

Introduced

Family: PARTHENOPIIDAE

***Daldorfia horrida* (Linnaeus, 1758)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-S-6668 (as <i>Daldorfia dimorpha</i>)	1959			x													
BPBM-S-6677 (as <i>Daldorfia dimorpha</i>)	1959				x												

Family: PILUMNIDAE

***Glabropilumnus seminudus* (Miers, 1884)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x			x							

Introduced

***Pilumnus alcocki* Borradaile, 1902**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

***Pilumnus nuttingi* Rathbun, 1906**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x		x		x				x	x		
BPBM-S-6800	1959				x												

***Pilumnus oahuensis* Edmondson, 1931**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x		x							x		x	x	x

Introduced

***Pilumnus planes* Edmondson, 1931**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											
BPBM-S 3386 (as <i>Pilumnus planus</i>)	1916												x		x		

Family: PORCELLANIDAE

***Petrolisthes* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

Family: PORTUNIDAE

***Carupa laeviuscula* Heller, 1923**

BPBM-S-6759	Year 1959	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x													

***Carupa tenuipes* Dana, 1851**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
															x		

***Catoptrus nitidus* Milne Edwards, 1870**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-S-6758	1959			x													

***Charybdis* sp.**

BPBM-S-6788	Year 1959	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x													

***Podophthalmus vigil* (Fabricius, 1798)**

Neighb. Isl. Consult. 1973	Year 1972	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Sunn et al. 1973	1973	x															x

***Portunus longispinosus* (Dana, 1852)**

Bigelow et al. 1989	Year 1988	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
								x									

***Portunus macrophthalmus* Rathbun, 1906**

BPBM-S-6718	Year 1959	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x													

***Portunus sanguinolentus* (Herbst, 1783)**

Sunn et al. 1973	Year 1973	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x															

***Portunus sanguinolentus hawaiiensis* (Herbst, 1783)**

Neighb. Isl. Consult. 1973	Year 1972	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
(as <i>Portunus sanguinolentus</i>)																	x
Cheney et al., 1977	1977													x			

***Scylla serrata* (Forsskål, 1775)**

Sunn et al. 1973	Year 1973	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x															

Introduced

***Thalamita dakini* Montgomery, 1931**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
															x		

***Thalamita edwardsi* Borradaile, 1900**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977													x			
															x		

***Thalamita integra* Dana, 1852**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x								x	x		x	x	x	x	x

***Thalamita* sp.**

BPBM-S-6745	Year 1959	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x													

Family: SCYLLARIDAE

***Paribacus antarcticus* (Lund, 1793)**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973																x

Family: TRAPEZIIDAE

***Domecia hispida* Eydoux & Souleyet, 1842**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study BPBM-S-6762			x										x			

***Trapezia cymodoce* (Herbst, 1799)**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-S-6610 (as <i>Trapezia cymodoce maculata</i>)			x													

***Trapezia digitalis* Latreille, 1825**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 BPBM-S-6601			x													x

***Trapezia ferruginea* Latreille, 1825**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-S-6607 (as <i>Trapezia cymodoce ferruginea</i>)			x													

***Trapezia flavopunctata* Eydoux & Souleyet, 1842**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973																x

***Trapezia intermedia* Miers, 1886**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973																x

***Trapezia rufopunctata* (Herbst, 1799)**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-S-6611			x													

***Trapezia* sp.**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study Cheney et al., 1977								x					x			

***Trapezia tigrina* Eydoux & Souleyet, 1842**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study Coles et al. 2004											x					
											x					

Family: XANTHIDAE

***Actaea banareias* (Rathbun, 1911)**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x													

***Actaea nodulosa* (White, 1947)**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-S-6608			x													

***Actaea superciliaris* Odhner, 1925**

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study BPBM-S-6541			x								x					

<i>Actumnus obesus</i> Dana, 1852		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x												
BPBM-S-6604		N/A			x													
<i>Carpilodes ruber</i> Milne Edwards, 1865		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-S-6609		N/A			x													
<i>Carpilodes</i> sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977		1977													x			
<i>Chlorodiella laevissima</i> (Dana, 1852)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study													x		x	x		
<i>Chlorodiella nigra</i> (Forsskål, 1775)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study													x	x	x	x	x	
<i>Chlorodiella</i> sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x		x	x	x	x	x				x		x	x	
<i>Chlorodopsis areolata</i> Milne Edwards, 1873		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-S-6631		N/A			x													
<i>Chlorodopsis niger</i> Forsskål, 1775		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977		1977													x			
<i>Etisus splendidus</i> Rathbun, 1906		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993		1993											x					
<i>Leptodius sanguineus</i> (Milne Edwards, 1834)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-S 3385		1916											x					
BPBM-S 5144		1916											x					
<i>Liocarpilodes biunguis</i> (Rathbun, 1906)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																		x
Cheney et al., 1977 (as <i>Zoozymodes biunguis</i>)		1977													x			
<i>Liocarpilodes integerrimus</i> Dana, 1852		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study															x	x		
<i>Liomera rubra</i> (Milne Edwards, 1865)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study													x	x				
<i>Liomera</i> sp.		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x	x								x					
<i>Lybia tesselata</i> (Latreille, 1812)		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-S-6606		N/A			x													
BPBM-S-6546		N/A			x													

Macromedaeus crassimanus (Milne Edwards, 1867)

Cheney et al., 1977 (as <i>Xantho crassimanus</i>)	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Neopilumnoplax major Sakai, 1978

BPBM-S-10624	Year 1970	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Paractaea rufopunctata Guinot, 1969

BPBM-S-6612 (as <i>Actaea rufopunctata</i>)	Year N/A	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x													

Paraxanthias notatus (Dana, 1852)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Phymodius nitidus (Dana, 1852)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
									x		x	x	x				

Phymodius unguatus (Milne Edwards, 1834)

Cheney et al., 1977	Year 1977	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Pilodius flavus Rathbun, 1893

Present Study BPBM-S-6816	Year 1959	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x										x		

Platypodia eydouxi (Milne Edwards, 1865)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
										x							

Platypodia semigranosa (Heller, 1861)

Present Study BPBM-S-6603	Year N/A	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x											x		
				x													

Pseudoliomera variolosa (Borradaile, 1902)

Present Study BPBM-S-6805 (as <i>Actaea variolosa</i>)	Year 1959	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x						x		x	x			x		
BPBM-S-6806 (as <i>Actaea variolosa</i>)	1959			x													

Xanthias canaliculatus Rathbun, 1906

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Xanthias lamarckii (Milne Edwards, 1834)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x						x	x				

Xanthias latifrons (de Man, 1888)

Present Study BPBM-S-6605	Year N/A	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x								x					

Xanthias sp. (Milne Edwards, 1834)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x														x

Phylum: PHORONIDA
 Family: PHORONIDAE

Phoronis sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x															
DeFelice, unpub. Ed. Grant	1996	x															

Phylum: ECTOPROCTA

Ectoprocta (sp. 1)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x				x									x	

Ectoprocta (sp. 2)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x				x	x	x								

Ectoprocta (sp. 3)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x	x												

Ectoprocta (sp. 4)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																x	

Ectoprocta (sp. 5)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x						x									

Class: GYMNOLAEMATA
 Order: CHEILOSTOMATA
 Family: EXOCHELLIDAE

Esharoides angela (Hutton, 1873)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	

Cryptogenic

Suborder: ANASCA
 Family: AETEIDAE

Aetea sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x									x		

Family: BUGULIDAE

Bugula dentata (Lamauroux, 1816)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x		x				x	x					x	

Introduced

Bugula neritina (Linnaeus, 1758)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x						x	x						

Introduced

Bugula robusta MacGillivray, 1869

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x								x	x						

Introduced

Caulibugula dendrograpta (Waters, 1913)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x						x							

Introduced

Family: CELLEPORIDAE

Holoporella sp.

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x	x	x	x	x	x	x	x			x	x		x	x	

Holoporella sp. 2

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
				x	x	x	x		x	x		x	x				

Holoporella sp. 3

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Holoporella sp. 4

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
										x							x

Family: CLEIDOCHASMATIDAE

Diaperoforma sp.

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
		x		x		x	x			x	x	x	x		x		x
Coles and Longenecker 2003	2003	x		x													

Family: HIPPOPODINIDAE

Cosciniopsis fusca Canu & Bassler, 1927

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
								x							x		

Family: MARGARETTIDAE

Margaretta gracilior Ortmann, 1892

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x		x	x				x		x	x	x

Margaretta sp.

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x												

Margaretta watersi Canu & Bassler, 1930

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
							x		x			x					

Family: MEMBRANIPORIDAE

Conopeum sp.

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x								x			

Family: MICROPORELLIDAE

Microporella sp.

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Family: PETRALIELLIDAE

Mucropetraliella magnifica (Busk, 1884)

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
							x										

Family: SAVIGNYELLIDAE

***Savignyella lafontii* (Audouin, 1826)**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
								x	x							

Introduced

Family: SCHIZOPORELLIDAE

***Schizomavella* sp.**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x										

***Schizoporella cf. errata* (Waters, 1878)**

Present Study

Coles and Longenecker 2003

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	x		x		x			x	x	x			x			x
2003	x		x													

Introduced

***Schizoporella decorata* Canu & Bassler, 1927**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x										

***Schizoporella* sp.**

Present Study

AECOS 2000

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x			x	x							x
2000																x

Family: SCRUPOCELLARIIDAE

***Caberia cf. boryi* (Audouin, 1826)**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x										

Cryptogenic

***Scrupocellaria maderensis* Busk, 1860**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x

***Scrupocellaria* sp.**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x

Family: SERTELLIDAE

***Reteporellina denticulata* (Busk, 1884)**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
	x		x					x								

***Reteporellina* sp.**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x

***Rhynchozoon* sp.**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x	x												

***Rhynchozoon* sp. 2**

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x													

Unid. Sertellidae

Present Study

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																x

Family: SMITTINIDAE

***Parasmittina* sp. 1**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x	x							x			

***Parasmittina* sp. 2**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Family: STEGINOPORELLIDAE

***Steginoporella magnilabris* MacGillivray, 1895**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
														x			

Family: TETRAPLARIIDAE

***Tetraplaria ventricosa* (Haswell, 1880)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x	x	x	x								

Family: THALAMOPORELLIDAE

***Thalamoporella* sp.**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
								x									

Family: VESICULARIIDAE

***Amathia distans* Busk, 1886**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 1992	1991	x	x	x	x	x				x	x	x					x
AECOS 2000	2000	x															
Coles and Longenecker 2003	2003	x		x													

Introduced

Unid. Vesiculariidae

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

***Zoobotryon verticillatum* (delle Chiaje, 1828)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles and Longenecker 2003	2003			x						x			x				

Introduced

Family: VITTATICELLIDAE

***Vittaticella* sp.**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
								x									

Family: WATERSIPORIDAE

***Watersipora arcuata* Banta, 1969**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
										x	x						

Cryptogenic

***Watersipora edmondsoni* Soule & Soule, 1968**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
									x	x							x

Introduced

Class: STENOLAEMATA
 Order: CYCLOSTOMATA

Unid. Cyclostomata

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x												

Suborder: ARTICULATA
 Family: CRISIIDAE

***Crisia circinata* Waters, 1914**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
						x											

***Crisia* sp.**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x												

Family: DIAPEROECIIDAE

***Diaperoecia intricata* Canu & Brassler, 1927**

AECOS 2000	Year 2000	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
															x		

***Diaperoecia* sp.**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
					x												

Family: LICHENOPORIDAE

***Disporella violacea* (Canu & Bassler, 1927)**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

***Lichenopora* sp.**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
																	x

Phylum: BRACHIOPODA

Class: ARTICULATA

Order: RHYNCHONELLIDA

Family: LAQUEIDAE

***Frenulina sanguinolenta* Gmelin, 1817**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972	x			x	x		x	x							x	
(as <i>Terebratulina sanguinolenta</i>)																	x

Phylum: ECHINODERMATA

Class: ASTEROIDEA

Order: VALVATIDA

Family: ACANTHASTERIDAE

***Acanthaster planci* Linnaeus, 1758**

Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Army Corps of Engin. 1994	1993				x												x
Coles et al. 2004	2002				x												
Coles et al. 2004	2003																x

Family: ASTEROPSEIDAE

***Asteropsis carinifera* (Lamarck, 1816)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x													
Neighb. Isl. Consult. 1973	1972																x
Cheney et al., 1977	1977													x			

Family: OPHIDIASTERIDAE

***Linckia multifora* (Lamarck, 1816)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Dept. of the Army, 1980	1979											x					
U.S. F&WS 1993	1993											x					

Class: OPHIUROIDEA

Order: OPHIURIDA

Family: AMPHIURIDAE

***Amphioplus caelatus* Ely, 1942**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									

***Amphipholis squamata* (delle Chiaje, 1828)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x	x	x	x	x	x								
BPBM-W-2514	1973													x			

Family: OPHIACTIDAE

***Ophiactis lethe* Clark, 1949**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												

***Ophiactis modesta* Brock, 1888**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x	x			x							x	

***Ophiactis savignyi* (Muller & Troschel, 1842)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x	x	x	x		x								x
Neighb. Isl. Consult. 1973	1972																x
Coles and Longenecker 2003	2003	x															

Cryptogenic

Family: OPHIOCOMIDAE

***Ophiocoma brevipes* Peters, 1851**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977													x			

***Ophiocoma dentata* Muller & Troschel, 1842**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												

***Ophiocoma erinaceus* Muller & Troschel, 1842**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x		x		x								
Cheney et al., 1977	1977													x			

***Ophiocoma pica* Muller & Troschel, 1842**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									
Coles et al. 2004	2003							x									

Ophiocoma sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												
Neighb. Isl. Consult. 1973	1972																x
Coles et al. 2004	2002				x												

Ophiocomella clippertoni Clark, 1939

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x										

Family: OPHIONEREIDIDAE

Ophionereis degeneri (Clark, 1949)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

Class: ECHINOIDEA

Order: CIDAROIDA

Family: CIDARIDAE

Chondrocidaris gigantea Agassiz, 1863

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									

Eucidaris metularia Lamarck, 1816

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x			x									
BPBM-W-1283	1959			x													
BPBM-W-1264	1959			x													
BPBM-W-1260	1959			x													

Order: DIADEMATOIDA

Family: DIADEMATIDAE

Astropyga radiata (Leske, 1778)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977														x		

Diadema paucispinum Agassiz, 1863

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Centrechinus paucispinus</i>)	1972																x
Holmes and Narver 1976	1976														x		
Army Corps of Engin. 1994	1993														x		
U.S. F&WS 1993	1993											x					
AECOS 2000	2000															x	

Diadema setosum (Leske, 1778)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

Echinothrix calamaris (Pallas, 1774)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x	x							x		x	x		
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1977	1977																x
Cheney et al., 1977	1977													x			
M & E Pacific 1980	1980																x
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000														x		
Coles et al. 2004	2002				x												
Coles and Longenecker 2003	2003	x		x													
Coles et al. 2004	2003											x		x		x	

***Echinothrix diadema* (Linnaeus, 1758)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x			x	x			x		x	x	x	
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
Dept. of the Army, 1980	1979												x				
AECOS 1992	1991	x															
U.S. F&WS 1993	1993												x				
AECOS 2000	2000															x	
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003	x			x												
Coles et al. 2004	2003							x				x		x		x	

Order: TEMNOPLEUROIDA

Family: TOXOPNEUSTIDAE

***Cyrtechinus verruculatus* (Lutken, 1864)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																x	
Neighb. Isl. Consult. 1973 (as <i>Lytechinus verruculatus</i>)	1972																x

***Pseudoboletia indiana* (Michelin, 1862)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993												x				

***Tripneustes gratilla* (Linnaeus, 1758)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x			x	x			x		x	x		
Neighb. Isl. Consult. 1973	1972																x
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
Sunn et al. 1977	1977																x
Dept. of the Army, 1980	1979											x					
M & E Pacific 1980	1980																x
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000															x	
Coles et al. 2004	2002				x												
Coles and Longenecker 2003	2003	x			x												
Coles et al. 2004	2003							x		x		x					

Order: ECHINOIDA

Family: ECHINOMETRIDAE

***Colobocentrotus atratus* (Linnaeus, 1758)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Dept. of the Army, 1980	1979												x				

***Echinometra mathaei* (de Blainville, 1825)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x								x	x	x		x	
Neighb. Isl. Consult. 1973	1972																x
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
Dept. of the Army, 1980	1979											x					
Brewer & Assoc. 1987	1987											x					
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
AECOS 2000	2000															x	
Coles et al. 2004	2002		x														
Coles and Longenecker 2003	2003				x												
Coles et al. 2004	2003									x		x					

***Echinometra oblonga* (de Blainville, 1825)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x	x				
Cheney et al., 1977	1977													x			
Coles et al. 2004	2003											x					

***Echinostrephus aciculatus* Agassiz, 1863**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x							x					
BPBM-W-1286	1959			x													
Holmes and Narver 1976	1976													x			
AECOS 2000	2000															x	
Coles et al. 2004	2002				x												
Coles et al. 2004	2003											x					

***Heterocentrotus mammillatus* (Linnaeus, 1758)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x					x				x	x	x			x
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
Dept. of the Army, 1980	1979											x					
Brewer & Assoc. 1987	1987											x					
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000															x	
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003							x				x		x			x

Order: CLYPEASTEROIDA

Family: CLYPEASTERIDAE

***Clypeaster eurypetalus* Clark, 1925**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									

Class: HOLOTHUROIDEA

Order: ASPIDOCHIROTIDA

Family: HOLOTHURIIDAE

***Actinopyga mauritiana* (Quoy & Gaimard, 1833)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x										x	
Holmes and Narver 1976	1976														x		
Cheney et al., 1977	1977														x		
Brewer & Assoc. 1987	1987											x					
U.S. F&WS 1993	1993											x					
AECOS 2000	2000															x	
Coles and Longenecker 2003	2003	x		x													

***Actinopyga obesa* (Selenka, 1867)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 1992	1991	x															

***Actinopyga* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Holothuria (Halodeima) atra Jaeger, 1833

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x	x						x					
Neighb. Isl. Consult. 1973	1972																x
Holmes and Narver 1976	1976														x		
Cheney et al., 1977	1977														x		
Dept. of the Army, 1980	1979											x					
Bigelow et al. 1989	1988							x									
U.S. F&WS 1993	1993												x				
Coles et al. 2004	2002					x											

Holothuria (Microthele) whitmaei Bell, 1887

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study															x		
Coles et al. 2004	2003												x		x		

Holothuria (Thymiosycia) arenicola Semper, 1868

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977														x		

Holothuria (Thymiosycia) impatiens (Forsskål, 1775)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977														x		

Holothuria difficulus Semper, 1868

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												

Holothuria sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Brewer & Assoc. 1987	1987												x				

Order: APODIDA

Family: SYNAPTIDAE

Synapta maculata (Chamisso & Eysenhardt, 1821)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993												x				

Phylum: CHORDATA

Class: ASCIDIACEA

Order: ENTEROGONA

Suborder: APOLOUSOBRANCHIA

Family: DIDEMNIDAE

Didemnidae (sp. 1)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x	x				x			x	x			

Didemnidae (sp. 2)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x			x							x				

Didemnidae (sp. 3)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x						x						

Didemnidae (sp. 4)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x			

Didemnidae (sp. 5)																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
							x	x					x						
Didemnidae (sp. 6)																			
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
																	x		
<i>Didemnum candidum</i> Savigny, 1816																			Introduced
Neighb. Isl. Consult. 1973	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
Coles and Longenecker 2003	1972																		x
	2003	x		x															
<i>Didemnum cf. candidum</i> Savigny, 1816																			Introduced
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
Coles et al. 2004	2002	x		x	x	x			x	x	x		x						x
<i>Didemnum</i> sp.																			
Neighb. Isl. Consult. 1973	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
AECOS 1992	1972																		x
AECOS 2000	1991	x																	
	2000																		x
<i>Diplosoma listerianum</i> (Milne Edwards, 1841)																			Introduced
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
											x								
Family: POLYCLINIDAE																			
<i>Polyclinum</i> sp.																			
Neighb. Isl. Consult. 1973	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
	1972																		x
Suborder: PHLEBOBRANCHIA																			
Family: ASCIDIIDAE																			
<i>Ascidia interrupta</i> Heller, 1878																			
Neighb. Isl. Consult. 1973	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
	1972																		x
<i>Ascidia</i> sp.																			
Neighb. Isl. Consult. 1973	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
	1972																		x
<i>Ascidia</i> sp. A																			Introduced
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
		x	x	x															
<i>Ascidia</i> sp. B																			Introduced
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
											x								
<i>Ascidia sydneiensis</i> Stimpson, 1855																			Introduced
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
AECOS 1992	1991	x							x	x	x		x						x
Coles and Longenecker 2003	2003	x		x															
<i>Phallusia nigra</i> Savigny, 1816																			Introduced
Present Study	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4		
AECOS 1992	1991	x								x	x								x
DeFelice, unpub. Ed. Grant	1997	x																	
Coles and Longenecker 2003	2003	x		x															

Family: CORELLIDAE

Corella minuta Traustedt, 1882

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	Introduced x

Order: PLEUROGONA

Suborder: STOLIDOBRANCHIA

Family: PYURIDAE

Herdmania pallida (Savigny, 1816)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x		x				x	x	x	x		x		x
Neighb. Isl. Consult. 1973 (as <i>Herdmania momus</i>)	1972																x
AECOS 1992 (as <i>Herdmania momus</i>)	1991	x															
AECOS 2000 (as <i>Herdmania momus</i>)	2000														x		
Coles and Longenecker 2003	2003	x		x													

Microcosmus exasperatus Heller, 1878

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x						x	x			x			Introduced

Microcosmus sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Family: STYELIDAE

Cnemidocarpa irene (Hartmeyer, 1906)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x															Introduced

Eusynstyela hartmeyeri Michaelson, 1904

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x													x

Polyandrocarpa sagamiensis Tokioka, 1953

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x								x	x						Introduced

Polycarpa aurita (Sluiter, 1890)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x	x	x		x	x				x				x

Styela canopus Savigny, 1816

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study										x	x						Introduced

Styela sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Symplegma brakenhielmi (Michaelson, 1904)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	Introduced x

Symplegma sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												

Class: ELASMOBRANCHII

Order: RAJIFORMES

Family: MYLIOBATIDAE

***Aetobatus narinari* (Euphrasen, 1790)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1973	1973	x															
Cheney et al., 1977	1977													x			
Army Corps of Engin. 1994	1993													x			

Order: CARCHARHINIFORMES

Family: CARCHARHINIDAE

***Carcharhinus altimus* Fourmanoir, 1961**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

***Carcharhinus amblyrhynchus* (Bleeker, 1856)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977 (as <i>Carcharhinus menisorrah</i>)	1977													x			
ORCA 1981 (as <i>Carcharhinus menisorrah</i>)	1981													x			

***Carcharhinus melanopterus* (Quoy & Gaimard, 1824)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977													x			
Bigelow et al. 1989	1988							x									

***Triaenodon obesus* (Rüppell, 1837)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977													x			
ORCA 1981	1981													x			
Army Corps of Engin. 1994	1993													x			

Family: SPHYRNIDAE

***Sphyrna lewini* (Griffith & Smith, 1834)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Class: ACTINOPTERYGII

Order: CLUPEIFORMES

Family: CLUPEIDAE

***Etrumeus teres* (De Kay, 1842)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Eutremus micropus</i>)	1972																x

***Spratelloides delicatulus* (Bennett, 1831)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993												x				

Family: ENGRAULIDAE

***Encrasicholina purpurea* (Fowler, 1900)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-I 25511	1950											x					
Neighb. Isl. Consult. 1973 (as <i>Stolephorus purpureus</i>)	1972																x
Dept. of the Army, 1980 (as <i>Stolephorus purpurea</i>)	1979													x			
Brewer & Assoc. 1987 (as <i>Stolephorus purpurea</i>)	1987											x					
U.S. F&WS 1993 (as <i>Stolephorus purpurea</i>)	1993											x					

Order: GONORYNCHIFORMES

Family: CHANIDAE

***Chanos chanos* (Forsskål, 1775)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Hawaii Harb. Div. 1976	1976									x							

Order: AULOPIIFORMES

Family: PARALEPIDIDAE

***Lestrolepis pofi* Dor, 1984**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-I-26327	1957			x													

Family: SYNODONTIDAE

***Saurida gracilis* (Quoy & Gaimard, 1824)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																x	
Neighb. Isl. Consult. 1973	1972																x
Coles et al. 2004	2003															x	

***Synodus* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles et al. 2004	2003																x

Order: AULOPIIFORMES

Family: SYNODONTIDAE

***Saurida flamma* Waples, 1982**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Army Corps of Engin. 1994	1993													x			
CRAMP website	2000																x
AECOS 2000	2000														x		

***Saurida* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 1992	1991	x															

Order: ATHERINIFORMES

Family: ATHERINIDAE

***Atherinomorus insularum* (Jordan & Evermann, 1903)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Pranesus insularum</i>)	1972																x
Sunn et al. 1973 (as <i>Pranesus insularum</i>)	1973	x															
AECOS 2000 (as <i>Pranesus insularum</i>)	2000																x

Suborder: SCORPAENOIDEI

Family: SCORPAENIDAE

***Sebastapistes coniora* Jenkins, 1903**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Dept. of the Army, 1980 (as <i>Scorpaena coniora</i>)	1979											x					
U.S. F&WS 1993	1993											x					

Order: CYPRINODONTIFORMES

Family: POECILIIDAE

***Gambusia affinis* (Baird & Girard, 1853)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4	Introduced
Neighb. Isl. Consult. 1973	1972																	x

Order: BELONIFORMES

Family: BELONIDAE

***Platybelone argalus* (Bennett, 1832)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	2000																x

***Tylosurus acus melanotus* (Bleeker, 1851)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Strongylura gigantea</i>)	1972																x

Order: BERYCIFORMES

Family: HOLOCENTRIDAE

***Adioryx lacteoguttatus* (Cuvier, 1829)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977																x

***Myripristis berndti* Jordan & Evermann, 1903**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
Coles et al. 2004	2003																x

***Myripristis* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003																x

***Neoniphon sammara* (Forsskål, 1775)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Holocentrus sammara</i>)	1972																x

Sargocentron punctatissimum (Cuvier, 1829)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Holocentrus lacteoguttatus</i>)	1972																x

Sargocentron sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	2000																x

Sargocentron xantherythrum (Jordan & Evermann, 1903)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976 (as <i>Adioryx xantherythrus</i>)	1976														x		

Order: SYNGNATHIFORMES

Family: AULOSTOMIDAE

Aulostomus chinensis (Linnaeus, 1766)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x	x											x	
Neighb. Isl. Consult. 1973	1972																x
M & E Pacific 1980	1980																x
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
AECOS 2000	2000															x	
Coles et al. 2004	2002				x												
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003																x

Family: FISTULARIIDAE

Fistularia commersonii Rüppell, 1838

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
CRAMP website	1999-2001											x					
AECOS 2000	2000															x	
CRAMP website	2000															x	
Coles et al. 2004	2003																x
Coles and Longenecker 2003	2003	x		x													

Fistularia petimba Lacépède, 1803

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									
Coles et al. 2004	2003						x	x									

Order: PERCIFORMES

Suborder: PERCOIDEI

Family: APOGONIDAE

Apogon kallopterus Bleeker, 1856

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x			x												
Neighb. Isl. Consult. 1973 (as <i>Apogon snyderi</i>)	1972																x
Army Corps of Engin. 1994	1993													x			

Apogon menesemus Jenkins, 1903

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
M & E Pacific 1980	1980																x

Foa brachygramma (Jenkins, 1904)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Apogon brachygrammus</i>)	1972																x
Bigelow et al. 1989	1988								x								

Family: CARANGIDAE

***Alectis ciliaris* (Bloch, 1788)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Carangoides ajax</i>)	1972																x

***Carangoides ferdau* (Forsskål, 1775)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Army Corps of Engin. 1994	1993														x		

***Carangoides orthogrammus* (Jordan & Gilbert, 1882)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 1992	1991	x															

***Caranx ignobilis* (Forsskål, 1775)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1973	1973	x															
Hawaii Harb. Div. 1976	1976									x							
U.S. F&WS 1993	1993											x					

***Caranx melampygus* Cuvier in Cuvier & Valenciennes, 1833**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x											
M & E Pacific 1980	1980																x
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000														x		x
Coles et al. 2004	2003						x										
Coles and Longenecker 2003	2003			x													

***Caranx sexfasciatus* Quoy & Gaimard, 1824**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	2000														x		

***Caranx* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	2000																x
Coles et al. 2004	2003						x										

***Caranx* sp. (juv.)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x													x
Coles and Longenecker 2003	2003	x		x													

***Decapterus macarellus* (Cuvier, 1833)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Decapterus pinnulatus</i>)	1972																x
Sunn et al. 1973 (as <i>Decapterus pinnulatus</i>)	1973	x															
Hawaii Harb. Div. 1976 (as <i>Decapterus pinnulatus</i>)	1976									x							

***Scomberoides lysan* (Forsskål, 1775)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Scomberoides sancti-petri</i>)	1972																x
Sunn et al. 1973 (as <i>Scomberoides sancti-petri</i>)	1973	x															
Army Corps of Engin. 1994	1993													x			

Selar crumenophthalmus (Bloch, 1793)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Trachurops crumenophthalmus</i>)	1972																x
Hawaii Harb. Div. 1976 (as <i>Trachurops crumenophthalmus</i>)	1976									x							
Army Corps of Engin. 1994	1993													x			

Seriola dumerili (Risso, 1810)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 1992	1991	x															

Family: CHAETODONTIDAE

Chaetodon auriga Forsskål, 1775

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x										x	x
Neighb. Isl. Consult. 1973	1972																x
Cheney et al., 1977	1977													x			
Sunn et al. 1977	1977																x
M & E Pacific 1980	1980																x
AECOS 1992	1991	x															
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000														x		x
Coles and Longenecker 2003	2003	x		x													
Coles et al. 2004	2003															x	

Chaetodon fremblii Bennett, 1828

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Sunn et al. 1977	1977																x
M & E Pacific 1980	1980																x
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
AECOS 2000	2000														x		
CRAMP website	2000																x

Chaetodon kleinii Bloch, 1790

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Sunn et al. 1977 (as <i>Chaetodon corallicola</i>)	1977																x

Chaetodon lineolatus Cuvier, 1831

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Army Corps of Engin. 1994	1993													x			

Chaetodon lunula (Lacépède, 1803)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x		x	x	x		x					x			x
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1973	1973	x															
Holmes and Narver 1976	1976													x			
Sunn et al. 1977	1977																x
M & E Pacific 1980	1980																x
AECOS 1992	1991	x															
Zieman 1992	1992							x									
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
CRAMP website	2000											x					
AECOS 2000	2000														x		x
CRAMP website	2001													x			
Coles et al. 2004	2002		x		x												
Coles et al. 2004	2003													x		x	
Coles and Longenecker 2003	2003	x		x													

Chaetodon lunulatus Quoy & Gaimard, 1825

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x	x						x			x	
Holmes and Narver 1976 (as <i>Chaetodon trifasciatus</i>)	1976												x			
Cheney et al., 1977 (as <i>Chaetodon trifasciatus</i>)	1977												x			
Army Corps of Engin. 1994	1993												x			
Coles et al. 2004	2003					x									x	

Chaetodon miliaris Quoy & Gaimard, 1825

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x									x	x	x
Neighb. Isl. Consult. 1973	1972		x													x
Holmes and Narver 1976	1976												x			
Sunn et al. 1977	1977															x
Cheney et al., 1977	1977												x			
M & E Pacific 1980	1980															x
Army Corps of Engin. 1994	1993												x			
U.S. F&WS 1993	1993										x					
AECOS 2000	2000													x		x
Coles et al. 2004	2003					x									x	
Coles and Longenecker 2003	2003		x													

Chaetodon multicinctus Garrett, 1863

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x	x						x			
Holmes and Narver 1976	1976												x			
Sunn et al. 1977	1977															x
Army Corps of Engin. 1994	1993												x			
CRAMP website	2000														x	
CRAMP website	2001												x			
Coles et al. 2004	2003					x	x						x			
Coles and Longenecker 2003	2003	x		x												

Chaetodon ornatissimus Cuvier (ex Solander) in Cuvier & Valenciennes, 1831

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x	x	x						x	x	x	
Holmes and Narver 1976	1976												x			
Cheney et al., 1977	1977												x			
Sunn et al. 1977	1977															x
Army Corps of Engin. 1994	1993												x			
U.S. F&WS 1993	1993										x					
CRAMP website	2000														x	
AECOS 2000	2000													x		
CRAMP website	2001												x			
Coles and Longenecker 2003	2003		x													
Coles et al. 2004	2003					x	x						x		x	

Chaetodon quadrimaculatus Gray, 1831

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x				x							x		x	
Holmes and Narver 1976	1976												x			
Cheney et al., 1977	1977												x			
M & E Pacific 1980	1980															x
Zieman 1992	1992						x									
Army Corps of Engin. 1994	1993												x			
U.S. F&WS 1993	1993										x					
AECOS 2000	2000													x		
CRAMP website	2000														x	
Coles et al. 2004	2002	x														
Coles et al. 2004	2003												x		x	

Chaetodon reticulatus Cuvier, 1831

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	2000													x		

Chaetodon sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult.	1973																x

Chaetodon trifascialis Quoy & Gaimard, 1825

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
CRAMP website	2000																x

Chaetodon unimaculatus Bloch, 1787

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x			x		x							x	x	
Neighb. Isl. Consult.	1973																x
Holmes and Narver	1976													x			
Sunn et al.	1977																x
Cheney et al.,	1977													x			
Zieman	1992								x								
Army Corps of Engin.	1994													x			
CRAMP website	2000																x
Coles et al.	2004		x														
Coles and Longenecker	2003			x													
Coles et al.	2004						x	x									x

Forcipiger flavissimus Jordan & McGregor, 1898

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x	x						x		x	
Holmes and Narver	1976													x			
Sunn et al.	1977																x
M & E Pacific	1980																x
Zieman	1992								x								
Army Corps of Engin.	1994													x			
CRAMP website	2000																x
AECOS	2000														x		
Coles and Longenecker	2003	x		x													
Coles et al.	2004								x					x			x

Forcipiger longirostris (Broussonet, 1782)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles et al.	2004														x		

Heniochus diphreutes Jordan, 1903

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x													
Neighb. Isl. Consult. (as <i>Heniochus acuminatus</i>)	1973																x
AECOS	2000																x
Coles and Longenecker	2003			x													

Family: CIRRHITIDAE

Amblycirrhitus bimacula (Jenkins, 1903)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Army Corps of Engin.	1994																x

Cirrhitops fasciatus (Bennett, 1828)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver	1976														x		
Sunn et al.	1977																x
U.S. F&WS	1993											x					
CRAMP website	1999-2001											x					
CRAMP website	2000																x

Cirrhitus pinnulatus (Bloch & Schneider, 1801)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x	x									
CRAMP website	2000																x
Coles et al.	2004						x	x									

Paracirrhites arcatus (Cuvier, 1829)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x		x	x						x	x	x	
Neighb. Isl. Consult. 1973	1972															x
Holmes and Narver 1976	1976												x			
Sunn et al. 1977	1977															x
Cheney et al., 1977	1977												x			
M & E Pacific 1980	1980															x
Zieman 1992	1992						x									
Army Corps of Engin. 1994	1993												x			
U.S. F&WS 1993	1993											x				
CRAMP website 1999-2001	1999-2001											x				
AECOS 2000	2000													x		
CRAMP website 2000	2000											x				
CRAMP website 2001	2001												x			
Coles et al. 2004	2002			x												
Coles et al. 2004	2003						x						x		x	
Coles and Longenecker 2003	2003			x												

Paracirrhites cinctus (Günther, 1860)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972															x

Paracirrhites forsteri (Bloch & Schneider, 1801)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x				x					x				x	
Holmes and Narver 1976	1976												x			
U.S. F&WS 1993	1993										x					
Army Corps of Engin. 1994	1993												x			
CRAMP website 1999-2001	1999-2001										x					
AECOS 2000	2000													x		
CRAMP website 2000	2000														x	
Coles et al. 2004	2002	x														
Coles et al. 2004	2003										x		x		x	
Coles and Longenecker 2003	2003			x												

Family: KUHLIIDAE

Kuhlia sandvicensis (Steindachner, 1876)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x								x			
Neighb. Isl. Consult. 1973	1972															x
Hawaii Harb. Div. 1976	1976								x							
Cheney et al., 1977	1977												x			
Dept. of the Army, 1980	1979										x	x				
Brewer & Assoc. 1987	1987										x					
AECOS 1992	1991	x														
Army Corps of Engin. 1994	1993												x			
U.S. F&WS 1993	1993										x					
AECOS 2000	2000													x		
Coles and Longenecker 2003	2003			x												
Coles et al. 2004	2003						x									

Family: KYPHOSIDAE

Kyphosus bigibbus Lacépède, 1801

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976	1976												x			
Army Corps of Engin. 1994	1993												x			
AECOS 2000	2000													x		

Kyphosus cinerascens (Forsskål, 1775)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Sunn et al. 1977	1977															x

Microcanthus strigatus (Cuvier, 1831)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972															x

Family: LETHRINIDAE

***Monotaxis grandoculis* (Forsskål, 1775)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976	1976													x			
Brewer & Assoc. 1987	1987											x					
CRAMP website	2001													x			
Coles et al. 2004	2003															x	

Family: LUTJANIDAE

***Aphareus furca* (Lacépède, 1802)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976 (as <i>Aphareus furcatus</i>)	1976													x			
CRAMP website	2000															x	

***Lutjanus fulvus* (Forster in Bloch & Schneider, 1801)**

Introduced

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x				x				x							
AECOS 1992	1991	x														x	x
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000														x		x
Coles and Longenecker 2003	2003	x		x													

***Lutjanus kasmira* (Forsskål, 1775)**

Introduced

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												
Sunn et al. 1977	1977																x
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000														x		x
Coles et al. 2004	2002				x												

***Lutjanus vaigiensis* (Quoy & Gaimard, 1825)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Cheney et al., 1977	1977													x			
M & E Pacific 1980	1980																x

Family: MULLIDAE

***Mulloidichthys flavolineatus* (Lacépède, 1801)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x			
Neighb. Isl. Consult. 1973 (as <i>Mulloidichthys samoensis</i>)	1972																x
Sunn et al. 1977 (as <i>Mulloidichthys samoensis</i>)	1977																x
Cheney et al., 1977 (as <i>Mulloidichthys samoensis</i>)	1977													x			
AECOS 1992	1991	x															
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000														x		
Coles et al. 2004	2003															x	

***Mulloidichthys vanicolensis* (Valenciennes, 1831)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x															
Cheney et al., 1977 (as <i>Mulloidichthys auriflamma</i>)	1977													x			
AECOS 1992	1991	x															
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000														x		x
Coles and Longenecker 2003	2003	x		x													

Parupeneus bifasciatus (Lacépède, 1802)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x		x	x						x		x	x
Holmes and Narver 1976	1976													x			
M & E Pacific 1980	1980																x
Army Corps of Engin. 1994	1993													x			
CRAMP website	2001													x			
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003							x						x		x	

Parupeneus cyclostomus (Lacépède, 1801)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x						x			
Holmes and Narver 1976	1976													x			
M & E Pacific 1980 (as <i>Parupeneus chryseerydos</i>)	1980																x
Zieman 1992	1992							x									
Army Corps of Engin. 1994	1993													x			
CRAMP website	2000															x	
Coles et al. 2004	2003							x						x			

Parupeneus multifasciatus (Quoy & Gaimard, 1825)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x			x	x	x	x		x				x		x	
Neighb. Isl. Consult. 1973	1972																x
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
Sunn et al. 1977	1977																x
Dept. of the Army, 1980	1979											x					
AECOS 1992	1991	x															
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
AECOS 2000	2000														x		x
CRAMP website	2000											x					
CRAMP website	2001													x			
Coles et al. 2004	2002					x											
Coles et al. 2004	2003							x						x		x	
Coles and Longenecker 2003	2003	x		x													

Parupeneus pleurostigma (Bennett, 1831)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977													x			

Parupeneus porphyreus (Jenkins, 1903)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x			x						x	x		x
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1973	1973	x															
Cheney et al., 1977	1977													x			
Sunn et al. 1977	1977																x
M & E Pacific 1980	1980																x
AECOS 1992	1991	x															
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
AECOS 2000	2000															x	x
Coles et al. 2004	2002				x												
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003							x									

Upeneus arge Jordan & Evermann, 1903

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1977	1977																x
Army Corps of Engin. 1994	1993													x			

Family: POLYNEMIDAE

***Polydactylus sexfilis* (Valenciennes, 1831)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult.	1973																
	1972																x

Family: POMACANTHIDAE

***Centropyge potteri* Jordan & Metz, 1912**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x		x	x								x	
Sunn et al.	1977																x
M & E Pacific	1980																x
Army Corps of Engin.	1994													x			
Coles et al.	2004				x												
Coles et al.	2003						x	x								x	

Family: PRIACANTHIDAE

***Priacanthus meeki* Jenkins, 1904**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles and Longenecker	2003	x		x													

Family: SERRANIDAE

***Cephalopholis argus* Bloch & Schneider, 1801**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x		x	x						x		x	
AECOS	1992	x															
Army Corps of Engin.	1994													x			
CRAMP website	1999-2001											x					
CRAMP website	2000															x	
AECOS	2000														x		
CRAMP website	2001													x			
Coles et al.	2004				x												
Coles et al.	2003						x	x						x		x	

Suborder: GOBIOIDEI

Family: ELEOTRIDAE

***Eleotris sandwicensis* Vaillant & Sauvage, 1875**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult.	1973																x
	1972																

Family: GOBIIDAE

***Asterropteryx semipunctatus* Rüppell, 1821**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al.,	1977																x

***Bathygobius fuscus* (Rüppell, 1828)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS	2000																x

***Oxyurichthys lonchotus* (Jenkins, 1903)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-I-26372	1980								x								

***Priolepis eugenius* (Jordan & Evermann, 1903)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-I-4794	1922								x								

Suborder: ACANTHUROIDEI

Family: ACANTHURIDAE

***Acanthurus achilles* Shaw, 1803**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x							x			
Holmes and Narver 1976	1976													x			
Brewer & Assoc. 1987	1987											x					
Zieman 1992	1992							x									
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000														x		
CRAMP website	2001													x			
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003													x		x	

***Acanthurus blochii* Valenciennes in Cuvier & Valenciennes, 1835**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x			x	x	x			x				x	x		
Holmes and Narver 1976 (as <i>Acanthurus mata</i>)	1976													x			
Cheney et al., 1977 (as <i>Acanthurus mata</i>)	1977													x			
Sunn et al. 1977 (as <i>Acanthurus mata</i>)	1977																x
M & E Pacific 1980 (as <i>Acanthurus mata</i>)	1980																x
AECOS 1992	1991	x															
Zieman 1992	1992							x									
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
AECOS 2000	2000														x		x
CRAMP website	2000															x	
CRAMP website	2001													x			
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003	x		x													
Coles et al. 2004	2003						x							x			

***Acanthurus dussumieri* Valenciennes in Cuvier & Valenciennes, 1835**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x		x		x						x				x
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1973	1973	x															x
Sunn et al. 1977	1977																x
Bigelow et al. 1989	1988							x									
AECOS 1992	1991	x															
Zieman 1992	1992							x									
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
AECOS 2000	2000														x		x
CRAMP website	2001									x							
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003						x									x	

***Acanthurus guttatus* (Bloch & Schneider, 1801)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Army Corps of Engin. 1994	1993													x			
Coles et al. 2004	2003						x										

***Acanthurus leucopareius* (Jenkins, 1903)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x		x	x
Sunn et al. 1977	1977																x
M & E Pacific 1980	1980																x
Zieman 1992	1992							x									
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993																
CRAMP website	1999-2001																
CRAMP website	2000																x
AECOS 2000	2000														x		
CRAMP website	2001													x			
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003						x			x		x					

***Acanthurus nigricans* (Linnaeus, 1758)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Brewer & Assoc. 1987 (as <i>Acanthurus glaucopareius</i>)	1987																
Army Corps of Engin. 1994	1993														x		

***Acanthurus nigrofuscus* (Forsskål, 1775)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x	x	x	x						x	x	x	
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
Sunn et al. 1977	1977																x
Bigelow et al. 1989	1988							x									
Zieman 1992	1992							x									
U.S. F&WS 1993	1993																
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001																
AECOS 2000	2000															x	
CRAMP website	2000																x
CRAMP website	2001									x							
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003							x						x			

***Acanthurus nigroris* Valenciennes, 1835**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x		x	x						x		x	
Neighb. Isl. Consult. 1973	1972																x
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
M & E Pacific 1980	1980																x
ORCA 1981	1981														x		
Brewer & Assoc. 1987	1987																
Bigelow et al. 1989	1988							x									
Army Corps of Engin. 1994	1993														x		
U.S. F&WS 1993	1993																
CRAMP website	1999-2001																
AECOS 2000	2000																
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003						x	x						x		x	

Acanthurus olivaceus Bloch & Schneider, 1801

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x		x										
Cheney et al., 1977	1977												x			
Sunn et al. 1977	1977															x
Brewer & Assoc. 1987	1987										x					
Zieman 1992	1992						x									
Army Corps of Engin. 1994	1993												x			
U.S. F&WS 1993	1993										x					
AECOS 2000	2000													x		
CRAMP website	2001												x			
Coles et al. 2004	2002	x		x												
Coles et al. 2004	2003					x										

Acanthurus triostegus sandvicensis Streets, 1877

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x	x		x	x				x		x	x	
Neighb. Isl. Consult. 1973 (as <i>Acanthurus sandvicensis</i>)	1972															x
Sunn et al. 1973 (as <i>Acanthurus sandvicensis</i>)	1973	x														
Holmes and Narver 1976	1976												x			
Hawaii Harb. Div. 1976 (as <i>Acanthurus sandvicensis</i>)	1976								x							
Sunn et al. 1977 (as <i>Acanthurus sandvicensis</i>)	1977															x
Cheney et al., 1977	1977												x			
M & E Pacific 1980 (as <i>Acanthurus sandvicensis</i>)	1980															x
Brewer & Assoc. 1987	1987										x					
Bigelow et al. 1989	1988						x									
AECOS 1992	1991	x														
Zieman 1992	1992						x									
Army Corps of Engin. 1994	1993												x			
U.S. F&WS 1993	1993										x					
CRAMP website	1999-2001										x					
AECOS 2000	2000													x		x
CRAMP website	2000														x	
CRAMP website	2001												x			
Coles et al. 2004	2002		x		x											
Coles et al. 2004	2003						x						x		x	
Coles and Longenecker 2003	2003	x		x												

Acanthurus xanthopterus Valenciennes, 1835

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972															x

Ctenochaetus hawaiiensis Randall, 1955

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976	1976												x			
Coles et al. 2004	2003												x		x	

Ctenochaetus strigosus (Bennett, 1828)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x	x	x						x		x	
Sunn et al. 1977	1977															x
Cheney et al., 1977	1977												x			
M & E Pacific 1980	1980															x
ORCA 1981	1981												x			
AECOS 1992	1991	x														
U.S. F&WS 1993	1993										x					
Army Corps of Engin. 1994	1993												x			
CRAMP website	1999-2001										x					
AECOS 2000	2000													x		
CRAMP website	2000														x	
CRAMP website	2001								x							
Coles and Longenecker 2003	2003	x		x												
Coles et al. 2004	2003						x						x		x	

***Naso brevirostris* (Valenciennes, 1835)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993											x					
AECOS 2000	2000															x	

***Naso caesius* Randall & Bell, 1992**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles and Longenecker 2003	2003	x															

***Naso lituratus* (Forster in Bloch & Schneider, 1801)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x	x						x			
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
AECOS 2000	2000														x		
CRAMP website	2000																x
CRAMP website	2001													x			
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003							x						x		x	

***Naso unicornis* (Forsskål, 1775)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976	1976													x			
Army Corps of Engin. 1994	1993													x			
CRAMP website	2000															x	

***Zebrasoma flavescens* (Bennett, 1828)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x	x									x	x	
Neighb. Isl. Consult. 1973	1972																x
Holmes and Narver 1976	1976													x			
M & E Pacific 1980	1980																x
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000														x		
CRAMP website	2000															x	
Coles et al. 2004	2002				x												
Coles and Longenecker 2003	2003	x		x													
Coles et al. 2004	2003													x		x	

***Zebrasoma veliferum* (Bloch, 1795)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
ORCA 1981	1981													x			
Army Corps of Engin. 1994	1993													x			
CRAMP website	2000															x	
Coles et al. 2004	2003																x

Family: ZANCLIDAE

Zanclus cornutus (Linnaeus, 1758)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x		x	x			x			x		x	x	x
Sunn et al. 1973 (as <i>Zanclus canescens</i>)	1973	x															
Holmes and Narver 1976 (as <i>Zanclus canescens</i>)	1976													x			
Cheney et al., 1977 (as <i>Zanclus canescens</i>)	1977													x			
Sunn et al. 1977 (as <i>Zanclus canescens</i>)	1977																x
Dept. of the Army, 1980 (as <i>Zanclus canescens</i>)	1979											x					
M & E Pacific 1980 (as <i>Zanclus canescens</i>)	1980																x
AECOS 1992	1991	x															
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
CRAMP website	2000															x	
AECOS 2000	2000														x		x
Coles et al. 2004	2002		x														
Coles et al. 2004	2003															x	
Coles and Longenecker 2003	2003	x		x													

Suborder: SPHYRAENOIDEI

Family: SPHYRAENIDAE

Sphyaena barracuda (Walbaum, 1792)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Dept. of the Army, 1980	1979												x				
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
Coles and Longenecker 2003	2003	x															

Suborder: MUGILOIDEI

Family: MUGILIDAE

Mugil cephalus Linnaeus, 1758

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-I-3810	1922							x									
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1973	1973	x															
Hawaii Harb. Div. 1976	1976									x							
Cheney et al., 1977	1977													x			
Dept. of the Army, 1980	1979											x					

Neomyxus leuciscus (Günther, 1871)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Army Corps of Engin. 1994	1993														x		

Suborder: LABROIDEI

Family: CICHLIDAE

Oreochromis macrochir (Boulenger, 1912)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977 (as <i>Tilapia macrochir</i>)	1977																Introduced x

														Introduced				
		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
<i>Oreochromis mossambicus</i> (Peters, 1852)																		
Cheney et al., 1977 (as <i>Tilapia mossambica</i>)	1977	1977													x			
Family: LABRIDAE																		
<i>Anampses chrysocephalus</i> Randall, 1958																		
CRAMP website	2001	2001													x			
Coles et al. 2004	2003	2003															x	
<i>Anampses cuvier</i> Quoy & Gaimard, 1824																		
Brewer & Assoc. 1987	1987	1987											x					
Army Corps of Engin. 1994	1993	1993													x			
U.S. F&WS 1993	1993	1993											x					
<i>Bodianus bilunulatus</i> (Lacépède, 1801)																		
Present Study		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Sunn et al. 1977	1977	1977			x	x		x	x									
M & E Pacific 1980	1980	1980																x
Army Corps of Engin. 1994	1993	1993													x			
CRAMP website	1999-2001	1999-2001											x					
AECOS 2000	2000	2000															x	
Coles et al. 2004	2002	2002				x												
Coles et al. 2004	2003	2003						x	x									
<i>Cheilinus rhodochrous</i> Günther, 1867																		
Holmes and Narver 1976	1976	1976													x			
Cheney et al., 1977	1977	1977													x			
M & E Pacific 1980	1980	1980																x
<i>Cheilinus unifasciatus</i> Streets, 1877																		
Sunn et al. 1973 (as <i>Chelinus rhodochrous</i>)	1973	1973	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
			x															
<i>Cheilio inermis</i> (Forsskål, 1775)																		
Present Study		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles et al. 2004	2003	2003											x					
													x					
<i>Coris flavovittata</i> (Bennett, 1829)																		
Present Study		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Coles et al. 2004	2002	2002		x														x
Coles et al. 2004	2003	2003		x														x
<i>Coris gaimard</i> (Quoy & Gaimard, 1824)																		
Present Study		Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976	1976	1976				x		x							x			
Cheney et al., 1977	1977	1977													x			
Zieman 1992	1992	1992							x									
Army Corps of Engin. 1994	1993	1993													x			
U.S. F&WS 1993	1993	1993											x					
CRAMP website	1999-2001	1999-2001											x					
CRAMP website	2000	2000																x
CRAMP website	2001	2001													x			
Coles et al. 2004	2002	2002				x												
Coles et al. 2004	2003	2003																x

Coris venusta Vaillant & Sauvage, 1875

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
CRAMP website	1999-2001											x					
CRAMP website	2000															x	
Coles et al. 2004	2003															x	
Coles and Longenecker 2003	2003			x													

Gomphosus varius Lacépède, 1801

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x	x	x	x						x		x	
Holmes and Narver 1976	1976													x			
Sunn et al. 1977	1977																x
Cheney et al., 1977	1977													x			
Zieman 1992	1992							x									
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
CRAMP website	2000																x
AECOS 2000	2000														x		
CRAMP website	2001													x			
Coles et al. 2004	2002		x		x												
Coles et al. 2004	2003							x						x		x	
Coles and Longenecker 2003	2003			x													

Halichoeres ornatissimus (Garrett, 1863)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x		x							x		x	
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
Sunn et al. 1977	1977																x
Dept. of the Army, 1980	1979											x					
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
CRAMP website	2000																x
Coles et al. 2004	2002		x		x												
Coles et al. 2004	2003						x							x		x	

Halichoeres sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977													x			

Labroides phthirophagus Randall, 1958

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x		x		x		x			x	x	x		x	
Neighb. Isl. Consult. 1973	1972																x
Holmes and Narver 1976	1976													x			
Sunn et al. 1977	1977																x
Cheney et al., 1977	1977													x			
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
CRAMP website	2000																x
AECOS 2000	2000														x		
CRAMP website	2001													x			
Coles et al. 2004	2002		x		x												
Coles et al. 2004	2003						x					x		x		x	
Coles and Longenecker 2003	2003			x													

Macropharyngodon geoffroyi (Quoy & Gaimard, 1824)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
Coles et al. 2004	2003																x

Novaculichthys taeniourus (Lacépède, 1801)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x										
U.S. F&WS 1993	1993											x					
CRAMP website	2000															x	
Coles et al. 2004	2003																x

Oxycheilinus bimaculatus (Valenciennes, 1840)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																x	
U.S. F&WS 1993	1993											x					
(as <i>Cheilinus bimaculatus</i>)																	
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
Coles et al. 2004	2003																x

Oxycheilinus unifasciatus (Streets, 1877)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									
U.S. F&WS 1993	1993											x					
(as <i>Cheilinus unifasciatus</i>)																	
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
CRAMP website	2001													x			
Coles et al. 2004	2003							x						x		x	

Pseudocheilinus octotaenia (Jenkins, 1901)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									x
Holmes and Narver 1976	1976														x		
Coles et al. 2004	2003							x									x

Pseudocheilinus tetrataenia Schultz, 1960

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x	x									
CRAMP website	2000																x
Coles et al. 2004	2003							x									

Pseudojuloides cerasinus (Snyder, 1904)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976	1976														x		
Sunn et al. 1977	1977																x

Stethojulis balteata (Quoy & Gaimard, 1824)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x		x	x				x				x	
Holmes and Narver 1976	1976														x		
Cheney et al., 1977	1977														x		
Sunn et al. 1977	1977																x
(as <i>Stethojulis axularis</i>)																	
Dept. of the Army, 1980	1979											x					
Zieman 1992	1992							x									
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
CRAMP website	2000																x
CRAMP website	2001													x			
Coles et al. 2004	2002				x												
Coles and Longenecker 2003	2003																
Coles et al. 2004	2003							x				x					x

Thalassoma ballieui (Valliant & Sauvage, 1875)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976	1976														x		
Cheney et al., 1977	1977														x		
M & E Pacific 1980	1980																x
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					

Thalassoma duperrey (Quoy & Gaimard, 1824)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x	x	x	x	x			x		x	x	x	
Neighb. Isl. Consult. 1973	1972																x
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
Sunn et al. 1977	1977																x
Dept. of the Army, 1980	1979											x					
M & E Pacific 1980	1980																x
Brewer & Assoc. 1987	1987											x					
Bigelow et al. 1989	1988							x									
AECOS 1992	1991	x															
Zieman 1992	1992							x									
Army Corps of Engin. 1994	1993									x							
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
AECOS 2000	2000														x		
CRAMP website	2000															x	
CRAMP website	2001													x			
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003							x				x		x		x	

Thalassoma lutescens (Lay & Bennett, 1839)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977													x			
Army Corps of Engin. 1994	1993													x			

Thalassoma quinquevittatum (Lay & Bennett, 1839)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Army Corps of Engin. 1994	1993													x			

Thalassoma sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Thalassoma trilobatum (Lacépède, 1801)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Dept. of the Army, 1980 (as <i>Thalassoma fuscum</i>)	1979											x					
Zieman 1992	1992							x									
Army Corps of Engin. 1994	1993													x			

Family: POMACENTRIDAE

Abudefduf abdominalis (Quoy & Gaimard, 1825)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x		x			x							x	
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1977	1977																x
Cheney et al., 1977	1977													x			
M & E Pacific 1980	1980																x
Brewer & Assoc. 1987	1987											x					
Bigelow et al. 1989	1988							x									
AECOS 1992	1991	x															
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
CRAMP website	2000																x
AECOS 2000	2000										x		x				
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003							x									x

Abudefduf sordidus (Forsskål, 1775)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x		
Neighb. Isl. Consult. 1973																x
Brewer & Assoc. 1987											x					
Army Corps of Engin. 1994													x			
Coles and Longenecker 2003			x													

Abudefduf vaigiensis (Quoy & Gaimard, 1825)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x								x			
AECOS 2000														x		
Coles et al. 2004						x										
Coles and Longenecker 2003			x													

Chromis agilis Smith, 1960

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x							x		
Holmes and Narver 1976													x			
CRAMP website													x			
Coles et al. 2004							x						x		x	

Chromis hanui Randall & Swerdloff, 1973

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x		x			x	x								x
Cheney et al., 1977													x			
Army Corps of Engin. 1994													x			
CRAMP website															x	
AECOS 2000														x		
CRAMP website													x			
Coles et al. 2004		x		x												
Coles et al. 2004							x									x
Coles and Longenecker 2003			x													

Chromis leucura Gilbert, 1905

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Sunn et al. 1977																x

Chromis ovalis (Steindachner, 1900)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x									
Cheney et al., 1977													x			
Sunn et al. 1977																x
M & E Pacific 1980																x
Army Corps of Engin. 1994													x			
CRAMP website											x					
CRAMP website															x	
Coles et al. 2004							x									

Chromis vanderbilti (Fowler, 1941)

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study		x	x	x			x	x			x		x	x	x	
Holmes and Narver 1976													x			
Cheney et al., 1977													x			
Zieman 1992							x									
Army Corps of Engin. 1994													x			
U.S. F&WS 1993											x					
CRAMP website											x					
CRAMP website															x	
CRAMP website													x			
Coles et al. 2004		x		x												
Coles and Longenecker 2003			x													
Coles et al. 2004						x	x		x		x					

Chromis verater Jordan & Metz, 1912

Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
U.S. F&WS 1993											x					

***Dascyllus albisella* Gill, 1862**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study				x		x		x	x			x	x		x		
Neighb. Isl. Consult. 1973	1972																x
Cheney et al., 1977 (as <i>Dascyllus trimaculatus</i>)	1977													x			
Sunn et al. 1977	1977																x
M & E Pacific 1980	1980																x
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
AECOS 2000	2000														x		x
Coles et al. 2004	2003							x				x					
Coles and Longenecker 2003	2003	x															

***Plectroglyphidodon imparipennis* (Vaillant & Sauvage, 1875)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														
Dept. of the Army, 1980 (as <i>Abudefduf imparipennis</i>)	1979											x					
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
CRAMP website	2000															x	
Coles et al. 2004	2002		x														

***Plectroglyphidodon johnstonianus* Fowler & Ball, 1924**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x	x						x		x	
Holmes and Narver 1976	1976													x			
Sunn et al. 1977	1977																x
Cheney et al., 1977	1977													x			
Dept. of the Army, 1980	1979											x					
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
AECOS 2000	2000															x	
CRAMP website	2001													x			
Coles et al. 2004	2003							x						x		x	

***Plectroglyphidodon sindonis* (Jordan & Evermann, 1903)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x	x	x	x				x	x	x	x		
U.S. F&WS 1993	1993											x					
Coles et al. 2004	2002				x												
Coles et al. 2004	2003							x				x		x		x	

***Stegastes fasciolatus* (Ogilby, 1889)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x		x	x				x	x			x	
Neighb. Isl. Consult. 1973 (as <i>Pomacentrus jenkinsi</i>)	1972																x
Holmes and Narver 1976 (as <i>Pomacentrus jenkinsi</i>)	1976													x			
Cheney et al., 1977 (as <i>Pomacentrus jenkinsi</i>)	1977													x			
Sunn et al. 1977 (as <i>Pomacentrus jenkinsi</i>)	1977																x
Dept. of the Army, 1980 (as <i>Pomocentrus jenkinsi</i>)	1979											x					
M & E Pacific 1980 (as <i>Pomacentrus jenkinsi</i>)	1980																x
Brewer & Assoc. 1987	1987											x					
AECOS 1992	1991	x											x				
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
CRAMP website	2000															x	
AECOS 2000	2000														x		x
CRAMP website	2001													x			
Coles et al. 2004	2002				x												
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003							x				x				x	

Family: SCARIDAE

***Calotomus carolinus* (Valenciennes, 1840)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977 (as <i>Calotomus sandvicensis</i>)	1977													x			
Bigelow et al. 1989	1988							x									
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
Coles et al. 2004	2003																x

***Chlorurus perspicillatus* (Steindachner, 1879)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Scarus perspicillatus</i>)	1972																x
Holmes and Narver 1976 (as <i>Scarus perspicillatus</i>)	1976													x			
M & E Pacific 1980 (as <i>Scarus perspicillatus</i>)	1980																x
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
CRAMP website	2001													x			

Chlorurus sordidus (Forsskål, 1775)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x	x	x						x		x	
Holmes and Narver 1976 (as <i>Scarus sordidus</i>)	1976													x			
Cheney et al., 1977 (as <i>Scarus sordidus</i>)	1977													x			
Sunn et al. 1977 (as <i>Scarus sordidus</i>)	1977																x
M & E Pacific 1980 (as <i>Scarus sordidus</i>)	1980																x
Zieman 1992 (as <i>Scarus sordidus</i>)	1992							x									
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993 (as <i>Scarus sordidus</i>)	1993											x					
CRAMP website	1999-2001											x					
CRAMP website	2000																x
CRAMP website	2001													x			
Coles et al. 2004	2003							x						x		x	

Scarus dubius Bennett, 1828

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977													x			
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			

Scarus psittacus Forsskål, 1775

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
CRAMP website	2000																x
CRAMP website	2001													x			

Scarus rubroviolaceus Bleeker, 1849

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x										
Bigelow et al. 1989	1988							x									
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
CRAMP website	2000																x
CRAMP website	2001													x			
Coles et al. 2004	2003																x

Scarus sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			

Scarus sp. (juv.)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x	x	x						x	x		
AECOS 1992	1991	x															
AECOS 2000	2000														x		x
Coles et al. 2004	2003							x						x		x	

Suborder: BLENNIOIDEI

Family: BLENNIIDAE

Cirripectes vanderbilti (Fowler, 1938)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973 (as <i>Cirripectes variolosus</i>)	1972																x
Army Corps of Engin. 1994	1993													x			
CRAMP website	2000															x	
CRAMP website	2001													x			

***Cirripectes variolosus* (Fowler, 1938)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976	1976													x			

***Exallias brevis* (Kner, 1868)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x														
Holmes and Narver 1976	1976													x			
M & E Pacific 1980	1980																x
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
Coles et al. 2004	2002		x														
Coles et al. 2004	2003															x	

***Plagiotremus ewaensis* (Brock, 1948)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Sunn et al. 1977 (as <i>Runula ewaensis</i>)	1977																x
CRAMP website	2001													x			

***Plagiotremus goslinei* (Strasburg, 1956)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001											x					
CRAMP website	2000															x	

Order: PLEURONECTIFORMES

Family: BOTHIDAE

***Bothus* sp.**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Order: TETRAODONTIFORMES

Family: BALISTIDAE

***Melichthys niger* (Bloch, 1786)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study							x							x		x	
Holmes and Narver 1976	1976													x			
Army Corps of Engin. 1994	1993													x			
CRAMP website	2000															x	
AECOS 2000	2000														x		
CRAMP website	2001													x			
Coles et al. 2004	2003						x							x		x	

***Melichthys vidua* (Solander, 1844)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x		x	x				x		x			
Holmes and Narver 1976	1976													x			
M & E Pacific 1980	1980																x
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000														x		
CRAMP website	2001													x			
Coles et al. 2004	2002				x												
Coles et al. 2004	2003						x	x				x		x			

***Rhinecanthus aculeatus* (Linnaeus, 1758)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000														x		

***Rhinecanthus rectangulus* (Bloch & Schneider, 1801)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x									x					
Holmes and Narver 1976	1976													x			
Sunn et al. 1977	1977																x
Zieman 1992	1992							x									
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
CRAMP website	2000															x	
CRAMP website	2001													x			
Coles et al. 2004	2002		x														
Coles et al. 2004	2003											x					

***Sufflamen bursa* (Bloch & Schneider, 1801)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x		x							x	x	x	
Holmes and Narver 1976	1976													x			
Army Corps of Engin. 1994	1993													x			
CRAMP website	2000																x
AECOS 2000	2000														x		
CRAMP website	2001													x			
Coles et al. 2004	2002				x												
Coles et al. 2004	2003													x		x	

***Sufflamen fraenatus* (Latreille, 1804)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x		x										x
Coles et al. 2004	2002				x												
Coles et al. 2004	2003																x

Family: DIODONTIDAE

***Diodon holocanthus* Linnaeus, 1758**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
AECOS 2000	2000																x

***Diodon hystrix* Linnaeus, 1758**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1973	1973	x															
Cheney et al., 1977	1977													x			
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
CRAMP website	2000																x

Family: MONACANTHIDAE

***Aluterus scriptus* (Osbeck, 1765)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study																	x

***Cantherhines dumerilii* (Hollard, 1854)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									x
CRAMP website	2000																x
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003						x	x						x		x	

Cantherhines sandwichiensis (Quoy & Gaimard, 1824)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x									x					
Holmes and Narver 1976	1976														x		
Army Corps of Engin. 1994	1993														x		
U.S. F&WS 1993	1993												x				
CRAMP website	1999-2001												x				
Coles et al. 2004	2002		x														
Coles et al. 2004	2003																x

Pervagor aspricaudus (Hollard, 1854)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study								x									
Coles et al. 2004	2003							x									

Pervagor sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976 (as <i>Pervagor melanocephalus</i>)	1976																x

Pervagor spilosoma (Lay & Bennett, 1839)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976	1976																x
Cheney et al., 1977	1977																x
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993																x
Coles and Longenecker 2003	2003	x		x													

Family: OSTRACIIDAE

Lactoria fornasini (Bianconi, 1846)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Ostracion meleagris Shaw in Shaw & Nodder, 1796

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x	x						x	x	x	x		
Holmes and Narver 1976	1976														x		
Sunn et al. 1977	1977																x
Cheney et al., 1977 (as <i>Ostracion lentiginosus</i>)	1977														x		
Zieman 1992	1992							x									
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993														x		
CRAMP website	1999-2001											x					
AECOS 2000	2000															x	
CRAMP website	2000																x
CRAMP website	2001														x		
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003	x		x													
Coles et al. 2004	2003											x					
Coles et al. 2004 (as <i>Ostracion meleagris camurum</i>)	2003													x		x	

Family: TETRAODONTIDAE

***Arothron hispidus* (Linnaeus, 1758)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1977	1977																x
Cheney et al., 1977	1977													x			
M & E Pacific 1980	1980																x
AECOS 1992	1991	x															
U.S. F&WS 1993	1993											x					
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
AECOS 2000	2000														x		x
CRAMP website	2001													x			
Coles et al. 2004	2003						x									x	
Coles and Longenecker 2003	2003	x															

***Arothron meleagris* (Lacépède, 1798)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study												x					
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
Army Corps of Engin. 1994	1993													x			
Coles et al. 2004	2003											x					

***Canthigaster amboinensis* (Bleeker, 1865)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Holmes and Narver 1976	1976													x			
Army Corps of Engin. 1994	1993													x			
CRAMP website	2000															x	
Coles and Longenecker 2003	2003			x													
Coles et al. 2004	2003																x

***Canthigaster jactator* (Jenkins, 1901)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study			x	x	x	x	x		x			x	x	x	x	x	
Neighb. Isl. Consult. 1973	1972																x
Sunn et al. 1973	1973	x															
Holmes and Narver 1976	1976													x			
Cheney et al., 1977	1977													x			
Sunn et al. 1977	1977																x
M & E Pacific 1980	1980																x
AECOS 1992	1991	x															
Zieman 1992	1992							x									
Army Corps of Engin. 1994	1993													x			
U.S. F&WS 1993	1993											x					
CRAMP website	1999-2001												x				
AECOS 2000	2000														x		
CRAMP website	2000															x	
CRAMP website	2001													x			
Coles et al. 2004	2002		x		x												
Coles and Longenecker 2003	2003	x		x													
Coles et al. 2004	2003							x				x		x		x	

Order: ELOPIFORMES

Family: ELOPIDAE

***Elops hawaiiensis* Regan, 1909**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Order: ANGUILLIFORMES

Family: CONGRIDAE

***Conger marginatus* (Valenciennes, 1841)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Gorgasia hawaiiensis (Randall & Chess, 1979)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-I 38587	1999												x				

Family: MURAENIDAE

Echidna nebulosa (Ahl, 1789)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Cheney et al., 1977	1977													x			
U.S. F&WS 1993	1993											x					

Gymnothorax eurostus (Abbott, 1860)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Cheney et al., 1977	1977													x			
U.S. F&WS 1993	1993											x					

Gymnothorax flavimarginatus (Rüppell, 1830)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x												
Holmes and Narver 1976	1976													x			
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000																x
Coles et al. 2004	2002				x												

Gymnothorax gracilicauda Jenkins, 1903

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Gymnothorax meleagris (Shaw & Nodder, 1795)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study					x			x	x								x
Holmes and Narver 1976	1976													x			
Army Corps of Engin. 1994	1993													x			
CRAMP website	1999-2001											x					
Coles et al. 2004	2002				x												
Coles et al. 2004	2003							x						x		x	

Gymnothorax pictus (Ahl, 1789)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x

Gymnothorax rueppelliae (McClelland, 1845)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study						x			x								
Coles et al. 2004	2003						x										

Gymnothorax sp.

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Coles et al. 2004	2003						x							x		x	
Coles and Longenecker 2003	2003	x															

Gymnothorax undulatus (Lacépède, 1803)

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Neighb. Isl. Consult. 1973	1972																x
Holmes and Narver 1976	1976													x			

Family: OPHICHTHIDAE

Callechelys lutea Snyder, 1904

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
BPBM-I-25773 (as <i>Callechelys marmorata</i>)	1960			x													

Class: REPTILIA

Order: TESTUDINES

Family: CHELONIIDAE

***Chelonia mydas* (Linnaeus, 1758)**

	Year	Ka1	Ka2	Ka3	Ka4	Mo1	Mo2	Mo3	Mo4	Ma1	Ma2	Ma3	Ma4	Ha1	Ha2	Ha3	Ha4
Present Study														x		x	
Bigelow et al. 1989	1988							x									
Army Corps of Engin. 1994	1993													x			
AECOS 2000	2000														x		
Coles et al. 2004	2003													x		x	