



State of Hawaii, Department of Health
HEER Office

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APPENDIX 21-D

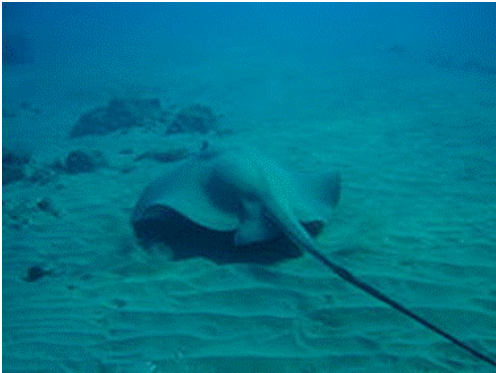
HABITAT PROFILES KEY HABITATS AND SPECIES IN HAWAI‘I

MUDFLATS/COASTAL WETLANDS/LAGOONS



Freshwater and Brackish

Representative | Kāne‘ohe Bay (represented above); other principal mudflats occur in Māmala Bay and

Location	Pearl Harbor		
Sediment Characteristics	Well-sorted, fine-grained		
Wave Energy	Low		
Typical Species	Common Name	Hawaiian Name	Scientific Name
Birds	Black-crowned night-heron	‘Auku‘u	<i>Nycticorax nycticorax hoactli</i>
Fish	Scalloped hammerhead shark (nursery)	Manō kihikihi	<i>Sphyrna lewini</i>
	Broad stingray (nursery) 	lupe	<i>Dasyatis lata</i>
	Gobies	not known	<i>Gobiidae</i>
Benthic Invertebrates	Alpheid shrimps	not known	<i>Alpheus malabaricus</i>
	Portunid crabs	not known	<i>Podophthalmus vigil, Libystes villosus</i>
	Stomatopods	not known	<i>Oratosquilla oratoria, Gonodactylaceus falcatus, Pseudosquilla ciliata</i>
	Polychaetes	not known	<i>Neanthes spp.</i>
Plants	Bulrushes	not	<i>Schoenoplectus spp.</i>

		known	
	Panic grass (invasive)	not known	<i>Panicum purpurascens</i>
	Pickleweed (invasive)	not known	<i>Batis maritima</i>
	Green algae	limu	<i>Ulva, Enteromorpha</i>
	Seagrasses	not known	<i>Halophila hawaiiiana</i> and <i>H. decipiens</i>

Threatened or Endangered Species

Sea Turtles	Green turtle	Honu	<i>Chelonia mydas</i>
Birds	Hawaiian stilt	Ae'o	<i>Himantopus mexicanus knudseni</i>
	Hawaiian coot	'Alae Ke'oke'o	<i>Fulica alai</i>
	Hawaiian duck	Koloa maoli	<i>Anas wyvilliana</i>
	Hawaiian common moorhen	'Alae 'Ula	<i>Gallinula chloropus sandvicensis</i>

Photo Credits:

Kāne'ōhe Mudflat: <http://lovelyhawaii.blogspot.com/2009/05/kaneohe-bay-low-tide-sunrise.html>

Dasyatis lata: http://en.wikipedia.org/wiki/Broad_stingray

ROCKY INTERTIDAL AND TIDE POOLS



High Wave Energy

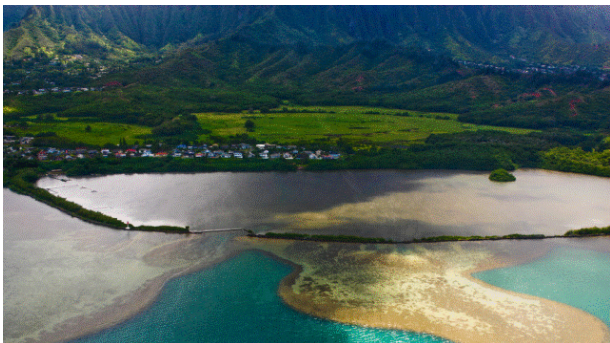


Low Wave Energy

Representative Location	Shorelines of all islands where constant wave action, currents, steep submarine slopes, and a lack of offshore sand reservoirs limit the accumulation of sand. Ūlio Point on Hawai'i is a typical high-energy tide pool habitat.		
Sediment Characteristics	Little sediment where wave energy is high; accumulation of fine sediment may occur where wave energy is low		
Wave Energy	Various		
Typical Species	Common Name	Hawaiian Name	Scientific Name
Birds	Black-crowned night-heron	'Auku'u	<i>Nycticorax nycticorax hoactli</i>
Fish	Hawaiian Flagtail	Āholehole	<i>Kuhlia sandvicensis</i>
	Convict Tang	Manini	<i>Acanthurus triostegus</i>
	Zebra rockskipper	Pāo 'o	<i>Istiblennius zebra</i>
	Gobies	Not known	<i>Gobiidae</i>
Benthic Invertebrates	Hawaiian Limpet	'opihi	<i>Cellana exarata</i>
	Helmet Urchin	hā'uke'uke kaupali	<i>Colobocentrotus atratus</i>
	Gastropods	Not known	<i>Littoraria pintado, Siphonaria normalis, Nerita picea, and Morula granulata</i>
	Samoa crab	Not known	<i>Scylla serrata</i>
	Day Octopus	Not known	<i>Octopus cyanea</i>

	Polychaetes	Not known	<i>Neanthes</i> spp.
Plants	Sea lettuce	Not known	<i>Ulva fasciata</i> ; <i>Ulva reticulata</i>
	Green Algae	Not known	<i>Halimeda</i> , <i>Neomeris</i> , <i>Caulerpa</i>
	Red algae	Not known	<i>Hydrolithon</i> , <i>Melanamansia</i> , <i>Pterocladia</i> , <i>Jania</i>
	Brown algae	Not known	<i>Padina</i> , <i>Turbinaria</i> , <i>Dictyota</i>
Threatened or Endangered Species			
Sea Turtles	Green turtle	Honu	<i>Chelonia mydas</i>
Birds	Hawaiian stilt	ae'o	<i>Himantopus mexicanus knudseni</i>
Photo Credits: Low Wave Energy: Tidepools at Maui, Puhilele Pt Haleakalā National Park by Forest & Kim Starr. Licensed under Public domain via Wikimedia Commons. https://commons.wikimedia.org/wiki/File:Starr_040423-0115_Scaevola_taccada.jpg High Wave Energy: Exposed wave-cut platform in bedrock. ftp://ftp.nodc.noaa.gov/pub/data.nodc/coris/data/NOAA/nos/EnvironmentalSensitivityIndices/Hawaii/ESI_DATA/INTRO.PDF			

COASTAL FISHPONDS



He'eia Fish pond



Mōli'i Fish Pond

Representative Location	Māmala Bay, Pearl Harbor, several around Kāne'ohe Bay (above), and three on the southwestern coast of Kaua'i		
Sediment Characteristics	Surface layer of fine-grained sediment and underlying coarse grains.		
Wave Energy	Low		
Typical Species	Common Name	Hawaiian	Scientific Name

		Name	
Birds	Black-crowned night-heron	'Auku'u	<i>Nycticorax nycticorax hoactli</i>
	Northern Shovelers	Koloa mohā	<i>Anas clypeata</i>
Fish	Striped Mullet	'Ama'ama	<i>Mugil cephalus</i>
	Milkfish	Awa	<i>Chanos chanos</i>
	Hawaiian Flagtail	Āholehole	<i>Kuhlia sandvicensis</i>
Benthic Invertebrates	Hawaiian Oysters	not known	<i>Dendrostrea sandvicensis</i>
	Anchialine shrimp	'Ōpae 'ula	<i>Halocaridina rubra</i>
	Samoan Crab		<i>Scylla serrata</i>
Plants	Seaweed	Limu	Numerous species
	Rock-dwelling algae		
	Pickleweed (invasive)	not known	<i>Batis maritima</i>
	Red Mangrove (invasive threatens habitat conversion)	not known	<i>Rhizophora mangle</i>
	Seagrasses	not known	<i>Halophila Hawaiiiana and H. decipiens</i>
	Red Algae (invasive)	not known	<i>Acanthophora spicifera</i>
Threatened or Endangered Species			
Sea Turtles	Green turtle	Honu	<i>Chelonia mydas</i>
Birds	Hawaiian stilt	Ae'o	<i>Himantopus mexicanus knudseni</i>
	Hawaiian coot	'Alae Ke'oke'o	<i>Fulica alai</i>
	Hawaiian duck	Koloa maoli	<i>Anas wyvilliana</i>
	Hawaiian common moorhen	'Alae 'Ula	<i>Gallinula chloropus sandvicensis</i>
<p>Photo Credits:</p> <p>Mōli'i Fishpond by Joel Bradshaw. Licensed under Public domain via Wikimedia Commons. https://commons.wikimedia.org/wiki/Category:Molii_Fishpond#/media/File:Oahu-Moliifishpond-rockwall.JPG He'eia Fishpond: https://fishpondfever.wordpress.com/about/</p>			

SEAGRASS BEDS



Representative Location	Inner reef flats of south Moloka'i; 'Anini (Kaua'i); near Māmala Bay and Kāne'ōhe Bay		
Sediment Characteristics	Seagrass can inhabit various sediment types including silt, mud, sand, gravel, rock		
Wave Energy	Various		
Typical Species	Common Name	Hawaiian Name	Scientific Name
Birds	Black-crowned night-heron	'Auku'u	<i>Nycticorax nycticorax hoactli</i>
Fish	Striped Mullet	'ama'ama	<i>Mugil cephalus</i>
	Hawaiian Flagtail	āholehole	<i>Kuhlia sandvicensis</i>
Benthic Invertebrates	Sea cucumbers	loli okuhi kuhi	<i>Holothuria atra</i>
	Hawaiian gastropod	not known	<i>Smaragdia bryanae</i>
	Polychaetes	not known	<i>Neanthes</i> spp.
Plants	Seagrasses	not known	<i>Halophila Hawaiiiana</i> and <i>H. decipiens</i>
	Green Algae/Mudweed (invasive)	not known	<i>Avrainvillea amadelpha</i>
	Sea lettuce	not known	<i>Ulva reticulata</i>
	Green Algae	not known	<i>Halimeda discoidea</i>

	Red algae	not known	<i>Spyridia filamentosa</i>
Threatened or Endangered Species			
Sea Turtles	Green turtle	Honu	<i>Chelonia mydas</i>
Birds	Hawaiian coot	'Alae ke'oke'o	<i>Fulica alai</i>
	Hawaiian common moorhen	'Alae 'Ula	<i>Gallinula chloropus sandvicensis</i>

Photo Credits:

Left: Seagrass. Halophila Hawaiiiana. LIMU Species List 2005. University of Hawai'i's Marine Option Program Summer Course Quantitative Underwater Ecological Surveying Techniques (QUEST). LIMU Species List 2005. <http://www.kmec.uhh.Hawaii.edu/QUESTInfo/limujs/Limulist/LIMU%20Species%20List%202005JS.htm>
 Right: <http://coconutislandnews.blogspot.com/2012/03/Hawaiian-seagrass-not-your-average.html>

MIXED SEDIMENT BAYS AND HARBORS



Representative Location

Pearl Harbor

Sediment Characteristics	Soft sediment overlaid on limestone platform of fossil reef origin; soft sediments often composed of carbonate grains derived from coralline algae, coral, mollusk fragments, foraminiferans, and tests of bryozoans and echinoderms		
Wave Energy	low		
Typical Species	Common Name	Hawaiian Name	Scientific Name
Birds	Black-crowned night-heron	'Auku'u	<i>Nycticorax nycticorax hoactli</i>
	Bristle-thighed curlew	Kioea	<i>Numenius tahitiensis</i>
	Pacific golden plover	<i>kōlea</i>	<i>Pluvialis dominica fulva</i>
	Brown booby	Not known	<i>Sula leucogaster plotus</i>
	Black noddy	noio, 'eki'eki	<i>Anous minutus melanogenys</i>
Fish	Hawaiian Flagtail	āholehole	<i>Kuhlia sandvicensis</i>
	yellowfin goatfish	Weke, weke 'ula	<i>Mulloidichthys vanicolensis</i>
	Mozambique Tilapia (invasive)	Not known	<i>Oreochromis mossambicus</i>
	Gobies	Not known	<i>Gobiidae</i>
	Hawaiian anchovy	Nehu	<i>Enchasiicholina purpurea</i>
	Striped Mullet	'ama'ama	<i>Mugil cephalus</i>
Benthic Invertebrates	White crab	Kuahonu	<i>Portunus sanguinolentus</i>
	Samoa crab	Not known	<i>Scylla serrata</i>
	Hooded oyster (<i>invasive</i>)	Not known	<i>Saccostrea cucullata</i>
	Hawaiian rock oyster	Not known	<i>Ostrea sandvichensis</i>
	Soft bodied sea cucumber	Not known	<i>Ophiodesoma spectabilis</i>
	Day Octopus	he'e	<i>Octopus cyanea</i>
	Polychaetes	not known	<i>Neanthes</i> spp.
Plants	Pickleweed (<i>invasive</i>)	not known	<i>Batis maritima</i>
	Red Mangrove (<i>invasive</i>)	not known	<i>Rhizophora mangle</i>
	Sea lettuce	not known	<i>Ulva reticulata</i>
Threatened or Endangered Species			

Sea Turtles	Green turtle	Honu	<i>Chelonia mydas</i>
Birds	Hawaiian stilt	Ae'o	<i>Himantopus mexicanus knudseni</i>
	Hawaiian coot	'Alae Ke'oke'o	<i>Fulica alai</i>
	Hawaiian duck	Koloa maoli	<i>Anas wyvilliana</i>
	Hawaiian common moorhen	'Alae 'Ula	<i>Gallinula chloropus sandvicensis</i>
	white tern	Manu-o-Kū	<i>Gygis alba rothschildi</i>

Photo Credits:

Aerial view of Pearl Harbor. https://en.wikipedia.org/wiki/Pearl_Harbor