
Appendix A

Aquatic and Marine Species near the Project Site

PHYLUM, CLASS, ORDER

FAMILY		Moanakai	Coco	Kawailoa	Wailua
<i>Genus species</i>	Common name	Rd. Near- shore Reef	Palms Lagoon	Watershed Estuaries	River Estuary
CYANOPHYTA	CYANOBACTERIA				
<i>Oscillatoria</i> sp.			X		
<i>Schizothrix</i> sp.			X		
Undetermined spp.		X			
CHLOROPHYTA	GREEN ALGAE				
<i>Cladophora catenata</i>		X			
<i>Cladophora</i> sp.			X		
<i>Dictyosphaeria versluysii</i>		X			
<i>Halimeda discoidea</i>		X			
<i>Microdictyon</i> sp.		X			
<i>Rhizoclonium</i> sp.			X		
HETEROKONTOPHYTA	BROWN ALGAE				
<i>Dictyota</i> sp.		X			
<i>Dictyota ceylanica</i>		X			
<i>Dictyota friabilis</i>		X			
<i>Padina japonica</i>		X			
<i>Ralfsia pangoensis</i>		X			
<i>Sargassum echinocarpum</i>		X			
<i>Turbinaria ornata</i>		X			
RHODOPHYTA	RED ALGAE				
<i>Acanthophora spicifera</i>	spiny seaweed	X			
<i>Ahnfeltiopsis flabelliformis</i>		X			
<i>Amansia glomerata</i>		X			
<i>Galaxaura rugosa</i>		X			
<i>Hydrolithon</i> spp.		X			
<i>Laurencia</i> sp.		X			
<i>Lithophyllum</i> spp.		X			
<i>Martensia fragilis</i>		X			
CNIDARIA, ANTHOZOA, ZOANTHIDEA					
ZOANTHIDAE					
<i>Palythoa caesia</i>	blue-gray zoanthid	X			
CNIDARIA, ANTHOZOA, SCLERACTINIA					
ACROPORIDAE					
<i>Montipora patula</i>	sandpaper rice coral	X			
FAVIIDAE					
<i>Cyphastrea ocellina</i>	ocellated coral	X			
POCILLOPORIDAE					
<i>Pocillopora damicornis</i>	lace coral	X			
<i>Pocillopora meandrina</i>	cauliflower coral	X			
<i>Pocillopora eydouxi</i>	antler coral	X			
PORITIDAE					
<i>Porites compressa</i>	finger coral	X			
<i>Porites lutea</i>	mound coral	X			
<i>Porites lobata</i>	lobe coral	X			
SIDERASTREDAE					
<i>Psammocora stellata</i>	stellar coral	X			
ANELLIDA, POLYCHAETA	WORMS				
AMPHINOMIDAE					
<i>Eurythoe complanata</i>	orange fireworm	X			

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MOLLUSCA, BIVALVIA	BIVALVES				
MYTILIDAE					
<i>Brachidontes crebristriatus</i>	Hawaiian mussel	X			
MOLLUSCA, GASTROPODA	SNAILS				
APLYSIIDAE					
<i>Dolabella auricularia</i>	eared sea hare, <i>kualakai</i>	X			
CYPRAEIDAE					
<i>Cypraea caputserpentis</i>	Snakehead cowry, <i>leho kupa</i>	X			
<i>Cypraea mauritiana</i>	humpback cowry, <i>leho ahi</i> or <i>leho pa'a</i>	X			
LITTORINIDAE					
<i>Nodilittorina hawaiiensis</i>	Hawaiian periwinkle	X			
<i>Paesiella tantilla</i>	keeled periwinkle	X			
<i>Littoraria intermedia</i>	dotted periwinkle	X			
MURICIDAE					
<i>Drupa ricina</i>	spotted drupe	X			
<i>Morula granulata</i>	granular drupe, <i>maka'awa</i>	X			
<i>Drupa (drupa) ricinus</i>	white-lipped drupe	X			
<i>albolabris</i>					
NERITIDAE					
<i>Nerita picea</i>	black nerite, <i>pipipi</i>	X			
PATELLIDAE					
<i>Cellana exarata</i>	black-foot 'opihi	X			
<i>Cellana sandwicensis</i>	yellow-foot 'opihi	X			
SIPHONARIIDAE					
<i>Siphonaria normalis</i>	false 'opihi, 'opihi 'awa	X			
THIARIDAE					
<i>Melanoides tuberculatus</i>	red-rimmed melania		X		
<i>Tarebia granifera</i>	quilted melania		X		
ARTHROPODA, MAXILLOPODA, THORACICA					
CHTHAMALIDAE					
<i>Chthamalus proteus</i>	Caribbean barnacle	X			
ARTHROPODA, CRUSTACEA, DECAPODA					
ALPHEIDAE					
<i>Alpheus</i> sp.	snapping shrimp	X			
CALAPPIDAE					
<i>Calappa hepatica</i>	common box crab	X			
CALLIANASSIDAE					
<i>Corallianassa borradailei</i>	Borradaile's ghost shrimp	X			
CAMBARIDAE					
<i>Procambarus clarkii</i>	American crayfish				X
GRAPSIDAE					
<i>Grapsus tenuicrustatus</i>	'a'ama	X			

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GRAPSIDAE cont.					
<i>Metopograpsus thukuhar</i>	<i>kukuau</i> ; purple claw shore crab			X	
<i>Pachygrapsus plicatus</i>	pleated rock crab	X	X		
PALAEMONIDAE					
<i>Macrobrachium grandimanus</i> (E)	Hawaiian prawn			X	X
<i>Macrobrachium lar</i>	Tahitian river prawn			X	
<i>Palaemon debilis</i>	feeble shrimp		X		
PALINULARIDAE					
<i>Panularis penicillatus</i>	tufted spiny lobster	X			
PORTUNIDAE					
<i>Scylla serrata</i>	Samoan crab		X		
XANTHIDAE					
<i>Liomera</i> sp.	liomera	X			
indet.	xanthid crab	X			
ECHINODERMATA, ECHINOIDAE					
DIADEMATIDAE					
<i>Echinothrix calamaris</i>	banded urchin	X			
ECHINOMETRIDAE					
<i>Echinometra mathaei</i>	rock-boring urchin	X			
<i>Echinometra oblonga</i>	oblong urchin	X			
ECHINODERMATA, HOLOTHUROIDAE					
HOLOTHURIIDAE					
<i>Actinopyga mauritiana</i>	white-spotted sea cucumber, <i>loli</i>	X			
<i>Holothuria atra</i>	black sea cucumber	X			
<i>Holothuria arenicola</i>	sand sea cucumber, <i>kohe lelewa</i>	X			
<i>Holothuria whitmaei</i>	teated sea cucumber, <i>loli</i>	X			
VERTEBRATA, PICES					
ACANTHURIDAE					
<i>Acanthurus triostegus</i>	convict tang, <i>manini</i>	X			
<i>Acanthurus nigrofusus</i>	lavender tang	X			
<i>Naso unicornis</i>	bluespine unicornfish, <i>kala</i>	X			
<i>Zebrasoma flavescens</i>	yellow tang, <i>lau'ipala</i>	X			
BLENNIDAE					
<i>Cirripectes vanderbilti</i>	scarface blenny, <i>pao'o</i>	X			
<i>Entomacrodus marmoratus</i>	marbled blenny, <i>pao'o</i>	X			
<i>Istiblennius zebra</i> (E)	Hawaiian zebra blenny, <i>pao'o</i>	X			
CENTRARCHIDAE					
<i>Lepomis macrochirus</i>	bluegill				X

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CENTRARCHIDAE cont.					
<i>Micropterus dolomieu</i>	small mouth bass				X
CHAETODONTIDAE					
<i>Chaetodon lunula</i>	raccoon butterflyfish,	X			
	<i>kikakapu</i>				
<i>Chaetodon auriga</i>	chevron butterflyfish	X			
CHANIDAE					
<i>Chanos chanos</i>	milkfish; 'awa'awa				X
CICHLIDAE					
<i>Oreochromis mossambicus</i>	Mosambique tilapia		X		X
<i>Sarotherodon melanotheron</i>	blackchin tilapia	X		X	
<i>Tilapia zilli</i>	red belly tilapia		X		
<i>Tilapia</i> sp.	indet. tilapia				X
ELEOTRIDAE					
<i>Eleotris sandwicensis</i> (E)	'o'opu 'akupa			X	X
ELOPIDAE					
<i>Elops hawaiiensis</i>	tenpounder				X
FISTULARIIDAE					
<i>Fistularia commersonii</i>	cornetfish	X			
GOBIIDAE					
<i>Awaous guamensis</i>	'o'opu nākea		X		
<i>Bathygobius</i> sp.	tide pool goby	X			
<i>Stenogobius hawaiiensis</i> (E)	'o'opu naniha			X	
KUHLIIDAE					
<i>Kuhlia xenura</i> (E)	Hawaiian flagtail, āholehole	X	X	X	X
KYPHOSIDAE					
<i>Kyphosus sandvicensis</i>	gray chub, nenuē	X			
LABRIDAE					
<i>Gomphosus varius</i>	bird wrasse, hinālea 'i'iwi	X			
<i>Stethojulis balteata</i> (E)	belted wrasse, 'ōmaka	X			
<i>Thalassoma duperrey</i> (E)	saddle wrasse, hinālea lauwiki	X			
<i>Thalassoma trilobatum</i>	Christmas wrasse, 'āwela	X			
LUTJANIDAE					
<i>Lutjanus fulvus</i>	blacktail snapper, to'au	X			
MUGILIDAE					
<i>Mugil cephalus</i>	striped mullet, 'ama'ama	X	X	X	X
MULLIDAE					
<i>Mulloidichthys vanicolensis</i>	yellowfin goatfish, weke ula	X			
<i>Mulloidichthys flavolineatus</i>	yellowstripe goatfish	X			

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MULLIDAE cont.					
<i>Parupeneus multifasciatus</i>	manybar goatfish, <i>moano</i>	X			
MURAENIDAE					
<i>Echidna nebulosa</i>	snowflake moray, <i>puhi kappa</i>	X			
POECILIIDAE					
<i>Gambusia affinis</i>	mosquitofish		X		
<i>Limia vittata</i>	Cuban molly		X		X
<i>Poecilia reticulata</i>	rainbow fish		X	X	
<i>Poecilia sp.</i>	indet. mollies			X	
<i>Xiphophorus helleri</i>	swordtail			X	
POMOCENTRIDAE					
<i>Abudefduf abdominalis</i> (E)	Hawaiian sergeant, <i>mamo</i>	X			
<i>Abudefduf sordidus</i>	blackspot sergeant, <i>kupipi</i>	X			
<i>Plectroglyphidodon imparipennis</i>	bright-eye damsel	X			
<i>Stegastes marginatus</i>	Hawaiian Gregory	X			
SERRANIDAE					
<i>Cephalopholis argus</i>	peacock grouper, <i>roi</i>	X			
SYNODONTIDAE					
<i>Synodus variegatus</i>	reef lizardfish	X			
TETRAODONTIDAE					
<i>Arothron hispidus</i>	stripebelly puffer	X			
<i>Canthigaster amboensis</i>	ambon toby	X			
<i>Canthigaster jactator</i> (E)	Hawaiian whitespotted toby	X			
ZANCLIDAE					
<i>Zanclus cornutus</i>	Moorish idol, <i>kihikihi</i>	X			

KEY TO SYMBOLS USED:

- † - Shell, carapace, or test only (not seen alive).
- E - Endemic - Found in Hawaii and nowhere else.