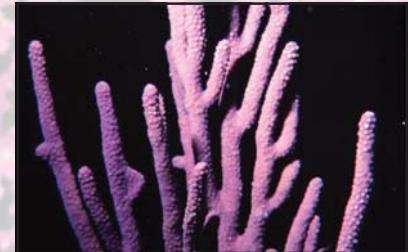
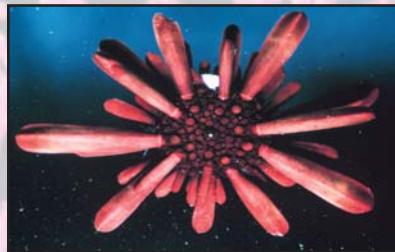


# APPENDICES AND BIBLIOGRAPHY



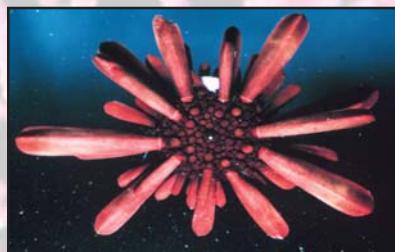
## Appendix I: Acronyms

## Appendix II: Species Names (Scientific Name to Common Name)

## Appendix III: Species Names (Common Name to Scientific Name)

## Appendix IV: Federal Protection for U.S. Coral Reef Ecosystems

## Bibliography



# APPENDICES AND BIBLIOGRAPHY

## Appendix I: Acronyms

AECOS	AECOS, Inc., Hawaii, Samoa
AIMS	Australian Institute for Marine Science
AISA™	Airborne Imaging Spectroradiometer for Applications
AGRRA	Atlantic and Gulf Rapid Reef Assessment
ASEPA	American Samoa Environmental Protection Agency
BC DPEP	Broward County Department of Planning and Environmental Protection
BINM	Buck Island Reef National Monument, DoI
CARICOMP	Caribbean Coastal Marine Productivity
CARRUS	Comparative Analyses of Reef Resilience Under Stress
CDHC	Coral Disease and Health Consortium, NOAA, USEPA, DoI
CFR	Code of Federal Regulations
CITES	Convention on International Trade in Endangered Species
C-MAN	Coastal Marine Automated Network, NOAA
CMES	Center for Marine and Environmental Science, University of the Virgin Islands
CMC	Center for Marine Conservation
CORIS	Coral Reef Information System, NOAA
CNMI	Commonwealth of the Northern Mariana Islands
CRAMP	Coral Reef Assessment and Monitoring Program, Hawai‘i
CRCA	Coral Reef Conservation Act
CREWS	Coral Reef Early Warning System, NOAA
CRMO	Coastal Resources Management Office, CNMI
CRMP	Coral Reef Monitoring Program, FKNMS
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program, NOAA
DAR	Division of Aquatic Resources, Hawai‘i DLNR
DAWR	Division of Aquatic and Wildlife Resources, Guam
DDT	Dichloro-Diphenyl-Trichloroethane
DEQ	Department of Environmental Quality, CNMI
DFW	Department of Fish and Wildlife, CNMI
DLNR	Department of Land and Natural Resources, Hawai‘i
DNER	Department of Natural and Environmental Resources, Puerto Rico
DOBOR	Division of Boating and Ocean Recreation, Hawai‘i
DoC	Department of Commerce
DoD	Department of Defense
DoH	Department of Health, Hawai‘i
DoI	Department of the Interior
DPNR	Department of Planning and Natural Resources, USVI
EEZ	Exclusive Economic Zone
EIS	Environmental Impact Statement
FDM	Farallon de Medinilla, CNMI
EPA	Environmental Protection Agency, state and jurisdictional
ESA	Endangered Species Act
EQB	Environmental Quality Board, Puerto Rico
EQPB	Environmental Quality Protection Board, Palau
FGB	Flower Garden Banks
FGBNMS	Flower Garden Banks National Marine Sanctuary, NOAA

<b>FKNMS</b>	Florida Keys National Marine Sanctuary, NOAA
<b>FMA</b>	Fisheries Management Area, Hawai‘i
<b>FMP</b>	Fisheries Management Plan
<b>FMRI</b>	Florida Marine Research Institute
<b>FRA</b>	Fisheries Replenishment Area, Hawai‘i
<b>FSM</b>	Federated States of Micronesia
<b>FWCC</b>	Fish and Wildlife Conservation Commission, Florida
<b>GEPA</b>	Guam Environmental Protection Agency
<b>GCRMN</b>	Global Coral Reef Monitoring Network
<b>GIS</b>	Geographic Information System
<b>HAPC</b>	Habitat Area of Particular Concern, Florida designated MPA
<b>HCRI-RP</b>	Hawai‘i Coral Reef Initiative Research Program
<b>ICW</b>	Intracoastal waterway, Florida
<b>IKONOS™</b>	High-resolution commercial earth imaging satellite operated by Space Imaging, inc.
<b>IPCC</b>	Inter-governmental Panel on Climate Change
<b>IUCN</b>	International Union for Conservation of Nature And Natural Resources, World Conservation Union
<b>LORAN</b>	Long Range Navigation
<b>KIRC</b>	Kaho‘olawe Island Reserve Commission, Hawai‘i
<b>LADS</b>	LAser Depth Sounding
<b>MEGIS</b>	Marine Ecosystems Global Informational Systems
<b>MIMRA</b>	Marshall Islands Marine Resources Authority Act
<b>MHI</b>	Main Hawaiian Islands
<b>MLCD</b>	Marine Life Conservation District, Hawai‘i
<b>MMS</b>	Minerals Management Service, DoI
<b>MMT</b>	Marine Monitoring Team, CNMI
<b>MPA</b>	Marine Protected Area
<b>NAR</b>	Natural Area Reserve, Hawai‘i
<b>NBSAP</b>	National Biodiversity Strategy and Action Plan
<b>NEPA</b>	National Environmental Policy Act
<b>NCRI</b>	National Coral Reef Institute, Florida
<b>NCORE</b>	National Center for Caribbean Coral Reef Research, Univeristy of Miami
<b>NERR</b>	National Estuarine Research Reserve, NOAA
<b>NFWF</b>	National Fish and Wildlife Foundation
<b>NGO</b>	Non-Governmental Organization
<b>NHP</b>	National Historic Park, National Park Service
<b>NMFS</b>	National Marine Fisheries Service, NOAA Marine Fisheries Service
<b>NMS</b>	National Marine Sanctuary
<b>NMSA</b>	National Marine Sanctuaries Act
<b>NOAA</b>	National Oceanic and Atmospheric Administration, DoC
<b>NOAA NESDIS</b>	NOAANational Environmental Satellite, Data, and Information Service
<b>NOAA OAR</b>	NOAA Oceanic and Atmospheric Research
<b>NOS</b>	National Ocean Service, NOAA Ocean Service
<b>NOW-RAMP</b>	Northwestern Hawaiian Island Rapid Ecological Assessment and Monitoring Program
<b>NPDES</b>	National Pollution Discharge Elimination
<b>NPS</b>	National Park Service, DoI
<b>NSU</b>	Nova Southeastern University, Florida
<b>NURC</b>	National Undersea Research Center, NOAA
<b>NURP</b>	National underwater Research Program, NOAA
<b>NWHI</b>	Northwestern Hawaiian Islands
<b>NWR</b>	National Wildlife Refuge, U.S. Fish and Wildlife Service

<b>OCRM</b>	Office of Coastal Resources Management, NOAA
<b>PADI</b>	PADI International, Inc., a SCUBA organization
<b>PAH</b>	Polycyclic Aromatic Hydrocarbons
<b>PCB</b>	PolyChlorinated Biphenyls
<b>PCS</b>	Palau Conservation Society
<b>PICRC</b>	Palau International Coral Reef Center
<b>RACE</b>	Restoration and Assessment of Coral Reef Ecosystems, NOAA
<b>REA</b>	Rapid Ecological Assessment
<b>RECON</b>	Reef Ecosystem Condition, The Ocean Conservancy and the USEPA
<b>REEF</b>	Reef Environmental Education Foundation, a non-governmental organization
<b>RMI</b>	Republic of the Marshall Islands
<b>RMIEPA</b>	Republic of the Marshall Islands Environmental Protection Authority
<b>ROV</b>	Remotely Operated Vehicle
<b>RPA</b>	Regulation and Permits Administration, Puerto Rico
<b>SCUBA</b>	Self-Contained Underwater Breathing Apparatus
<b>SEAKEYS</b>	Sustained Ecological Research Related to Management of the Florida Keys, NOAA
<b>SOPAC</b>	South Pacific Applied Geoscience Commission
<b>SPA</b>	Special Planning Area, Puerto Rico
<b>SST</b>	Sea Surface Temperature
<b>UCSC</b>	University of California at Santa Cruz
<b>UNCW</b>	University of North Carolina at Wilmington
<b>UNEP</b>	United Nations Environmental Programme
<b>UNEP WCMC</b>	United Nations Environmental Programme World Conservation Monitoring Center
<b>UNDP</b>	United Nations Development Program
<b>USAID</b>	U.S. Agency for International Development
<b>USCG</b>	U.S. Coast Guard
<b>USCRTF</b>	U.S. Coral Reef Task Force
<b>USDA</b>	U.S. Department of Agriculture
<b>USEPA</b>	U.S. Environmental Protection Agency
<b>USFWS</b>	U.S. Fish and Wildlife Service, DOI
<b>USGS</b>	U.S. Geological Survey, DoI
<b>USVI</b>	U.S. Virgin Islands
<b>UVI</b>	University of the Virgin Islands
<b>VICRNM</b>	Virgin Islands Coral Reef National Monument
<b>VMAS</b>	Virgin Islands Marine Advisory Service
<b>VMS</b>	Vessel Monitoring System
<b>VINP</b>	Virgin Islands National Park, DOI
<b>WQPP</b>	Water Quality Protection Program, FKNMS
<b>WPRFMC</b>	Western Pacific Regional Fisheries Management Council
<b>WWII</b>	World War II



## Appendix II: Species Names Scientific Name to Common Name

### **Marine Algae and Cyanobacteria**

<i>Cladophora</i> spp.	Green algal species
<i>Codium isthmocladum</i>	Dead man's fingers, a green algal species
<i>Dictyota</i> spp.	Brown algal species
<i>Hypnea</i> spp.	Brown algal species
<i>Hypnea musiformis</i>	A brown algal species
<i>Kappaphycus</i> spp.	Red algal species
<i>Kappaphycus alvarezii</i> <sup>1</sup>	A red algal species
<i>Porolithon</i> spp.	Encrusting coralline red algal species
<i>Sargassum</i> spp.	Brown algal species

### **Higher Plants**

<i>Bruguiera gymnorhiza</i>	Large-leaved orange mangrove
<i>Halodule wrightii</i>	Shoal grass
<i>Halophila decipiens</i>	Balloon grass
<i>Halophila hawaiiiana</i>	Endemic Hawaiian seagrass
<i>Lumnitzera litorea</i>	Black mangrove
<i>Rhizophora mangle</i> <sup>1</sup>	Red mangrove
<i>Sonneratia alba</i>	Mangrove apple
<i>Syringodium filiforme</i>	Manatee grass
<i>Thalassia testudinum</i>	Turtle grass

### **Cnidarians (hard corals, soft corals, sea fans)**

<i>Acropora cervicornis</i>	Staghorn coral
<i>Acropora cytherea</i>	Table coral
<i>Acropora gemmifera</i>	
<i>Acropora palmata</i>	Elkhorn coral
<i>Acropora prolifera</i>	Fused staghorn coral
<i>Agaricia agaricites</i>	Lettuce coral
<i>Antipathes</i> spp.	Black coral species
<i>Carijoa riisei</i>	Snowflake coral
<i>Colpophyllia natans</i>	Boulder brain coral
<i>Dichcoenia stokesii</i>	Elliptical star coral
<i>Diploria clivosa</i>	Knobby brain coral
<i>Diploria strigosa</i>	Symmetrical brain coral
<i>Eusmilia fastigiata</i>	Smooth flower coral
<i>Favia fragum</i>	Golfball coral
<i>Gorgonia ventalina</i>	Common sea fan
<i>Isophyllastrea rigida</i>	Rough star coral
<i>Madracis decactis</i>	Ten-ray star coral
<i>Madracis mirabilis</i>	Yellow pencil coral
<i>Meandrina meandrites</i>	Maze coral
<i>Millepora</i> spp.	Fire coral species
<i>Millepora alcicornis</i>	Branching fire coral
<i>Millepora complanata</i>	Blade fire coral
<i>Montastrea annularis</i>	Lobed star coral

<sup>1</sup> Considered an invasive species in Hawaii

<i>Montastrea cavernosa</i>	Great star coral
<i>Montastrea franksi</i>	Boulder star coral
<i>Montipora capitata</i>	Rice coral
<i>Mussa angulosa</i>	Spiny flower coral
<i>Oculina</i> spp.	Ivory coral species
<i>Palythoa caribaeorum</i>	White encrusting zoanthid
<i>Palythoa mammillosa</i>	Knobby zoanthid
<i>Pocillopora eydouxi</i>	
<i>Porites astreoides</i>	Mustard hill coral
<i>Porites compressa</i>	Clubtip finger coral
<i>Porites lobata</i>	Lobe coral
<i>Porites porites</i>	Finger coral
<i>Porites (=Synarea) rus</i>	Plate coral
<i>Siderastrea radians</i>	Lesser starlet coral
<i>Siderastrea siderea</i>	Massive starlet coral
<i>Scolymia cubensis</i>	Artichoke coral
<i>Solenastrea bournoni</i>	Smooth star coral

**Sponges**

<i>Cliona</i> spp.	Encrusting sponge species
<i>Ianthella basta</i>	Elephant ear sponge
<i>Terpios hoshinota</i>	Black encrusting sponge
<i>Vasum muricatum</i>	Caribbean vase
<i>Xestospongia muta</i>	Giant barrel sponge

**Polycheates (worms)**

<i>Sabellastarte sanctijosephi</i>	Featherduster worm
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**Molluscs (bivalves, gastropods)**

<i>Cellana talcosa</i>	Turtle limpet
<i>Euprymna scolopes</i>	Endemic Hawaiian sepiolid squid
<i>Echininus viviparis</i>	Endemic gastropod
<i>Lingula reevii</i>	
<i>Nerita guamensis</i> <sup>2</sup>	Guam nerite
<i>Pinctada</i> spp.	Pearl oyster species
<i>Pinctada margaritifera</i>	Black-lipped pearl oyster
<i>Strombus gigas</i>	Queen conch
<i>Tridacna</i> spp.	Giant clam species
<i>Trochus niloticus</i>	Topshell gastropod

**Crustaceans (lobsters, crabs)**

<i>Birgus latro</i>	Coconut crab
<i>Mithrax</i> spp.	Clinging crab species
<i>Panulirus argus</i>	Caribbean spiny lobster
<i>Panulirus guttatus</i>	Spotted spiny lobster

**Echinoderms (starfish, sea urchins)**

<i>Acanthaster planci</i>	Crown-of-thorns starfish
<i>Diadema antillarum</i>	Long-spined sea urchin
<i>Echinometra lucunter</i>	Rock-boring sea urchin
<i>Eucidaris tribuloides</i>	Slate-pencil urchin

<sup>2</sup> Endemic gastropod found in Guam and Northern Mariana Islands

## Fishes

Acanthuridae	Surgeonfish family
<i>Abudefduf saxatilis</i>	Sergeant major
<i>Abudefduf sordidus</i>	Blackspot sergeant
<i>Aetobatus narinari</i>	Spotted eagle rays
<i>Amphiprion tricinctus</i>	Three-banded anemonefish
<i>Bodianus rufus</i>	Spanish hogfish
<i>Bolbometopon muricatum</i>	Bumphead parrotfish
<i>Canthigaster rostrata</i>	Sharpnose puffer
<i>Caranx ignobilis</i>	Giant trevally
<i>Caranx melampygus</i>	Bluefin trevally jack (Omili = Hawaiian name)
<i>Caranx cryos</i>	Hardnose
<i>Carcharhinus falciformis</i>	Silky shark
<i>Carcharhinus galapagensis</i>	Galapago shark
<i>Carcharhinus leucas</i>	Bull shark
<i>Centropyge loriculus</i>	Flame angelfish
<i>Cephalopholis argus</i>	Bluespotted grouper
<i>Chaetodon flavocoronatus</i>	Yellow-crowned butterflyfish
<i>Chaetodon sedentarius</i>	Reef butterflyfish
<i>Cheilinus undulatus</i>	Humphead or Napoleon wrasse
<i>Chlorurus perspicillatus</i>	Spectacled parrotfish
<i>Chromis multilineata</i>	Brown chromis
<i>Coryphopterus personatus</i>	Masked goby
Dasyatidae	Stingray family
<i>Enchelycore pardalis</i>	Dragon eel
<i>Epinephelus drummondhayi</i>	Speckled hind
<i>Epinephelus lanceolatus</i>	Giant grouper
<i>Epinephelus morio</i>	Red grouper
<i>Epinephelus mystacinus</i>	Misty grouper
<i>Epinephelus nitrigus</i>	Warsaw grouper
<i>Epinephelus niveatus</i>	Snowy grouper
<i>Epinephelus quernus</i>	Hawaiian black grouper
<i>Epinephelus striatus</i>	Nassau grouper
<i>Genicanthus personatus</i>	Masked angelfish
<i>Haemulon aurolineatum</i>	Tomtate
<i>Haemulon chrysargyreum</i>	Smallmouth grunt
<i>Haemulon flavolineatum</i>	French grunt
<i>Haemulon plumieri</i>	White grunt
<i>Haemulon sciurus</i>	Bluestriped grunt
<i>Halichoeres bivittatus</i>	Slippery dick
<i>Hypoplectrus</i> spp.	Hamlet species
<i>Kyphosus sectatrix</i>	Bermuda chub
<i>Lactophrys triqueter</i>	Smooth trunkfish
<i>Lutjanus apodus</i>	Schoolmaster
<i>Lutjanus campechanus</i>	Red snapper
<i>Lutjanus fulvus</i>	Blacktail snapper
<i>Lutjanus griseus</i>	Gray snapper
<i>Lutjanus kasmira</i>	Blueline snapper
<i>Lutjanus vivanus</i>	Silk snapper
<i>Megalops atlanticus</i>	Tarpon
<i>Melichthys niger</i>	Black triggerfish

<i>Mobula hypostoma</i>	Devil ray
<i>Mullidae</i>	Goatfish family
<i>Mulloidichthys martinicus</i>	Yellow goatfish
<i>Mustelus canis</i>	Smooth dogfish
<i>Mycteroperca tigris</i>	Tiger grouper
<i>Mypteroperca microlepis</i>	Gag
<i>Oyurus chrysurus</i>	Yellowtail snapper
<i>Pagrus pagrus</i>	Red porgy
<i>Paranthias furcifer</i>	Creolefish
<i>Platax orbicularis</i>	Orbicular batfish, Pacific batfish
<i>Polydactylus sexfilis</i>	Pacific threadfin (Moi = Hawaiian name)
<i>Pomachromis gumaensis</i>	Guam reef damselfish
<i>Pomacanthus maculatus</i>	Emperor angelfish
<i>Prealtilicus popiae</i>	Marianas rockskipper
<i>Pterois sphex</i>	Hawaiian lionfish
<i>Pterois volitans</i>	Indo-Pacific lionfish
<i>Rhincodon typus</i>	Whale shark
<i>Rhomboplites aurorubens</i>	Vermillion snapper
<i>Scarus perspicillatus</i>	Speckled parrotfish
<i>Scarus croicensis</i>	Striped parrotfish
<i>Scarus vetula</i>	Queen parrotfish
<i>Scomberomerus cavalla</i>	King mackerel
<i>Sparisoma viride</i>	Stoplight parrotfish
<i>Sciaenops ocellatus</i>	Red drum
<i>Sphyna lewini</i>	Hammerhead shark
<i>Sphyraena barracuda</i>	Great barracuda
<i>Sphyraena lewini</i>	Scalloped hammerhead shark
<i>Stegastes partitus</i>	Bicolor damselfish
<i>Stegastes planifrons</i>	Three-spot damselfish
<i>Thalassoma bifasciatum</i>	Bluehead wrasse
<i>Triaenodon obesus</i>	Whitetip reef shark
<i>Zebrasoma flavescens</i>	Yellow tang

### Marine Reptiles

<i>Caretta caretta</i>	Loggerhead turtle
<i>Chelonia mydas</i>	Green sea turtle
<i>Dermochelys coriacea</i>	Leatherback turtle
<i>Eretmochelys imbricata</i>	Hawksbill turtle
<i>Laticauda columbrina</i>	Banded sea snake
<i>Lepidochelys kempii</i>	Kemp's ridley
<i>Lepidochelys olivacea</i>	Olive ridley
<i>Pelmas platurus</i>	Yellowbellied sea snake

### Birds

<i>Falco peregrinus</i>	Peregrine falcon
<i>Pelecanus occidentalis</i>	Brown pelican
<i>Sula leucogaster</i>	Brown booby

### Marine Mammals

<i>Balaenoptera edeni</i>	Bryde's whale
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<i>Dugong dugon</i>	Dugong, seacow
<i>Globicephala macrorhynchus</i>	Short-finned pilot whale
<i>Globicephala mala</i>	Long-finned pilot whale
<i>Kogia breviceps</i>	Dwarf sperm whale
<i>Kogia simus</i>	Pygmy sperm whale
<i>Megaptera novaeangliae</i>	Humpback whale
<i>Monachus schauinslandi</i>	Hawaiian monk seal
<i>Monachus tropicalis</i>	Caribbean monk seal
<i>Physeter catodon</i>	Sperm whale
<i>Pseudorca crassidens</i>	False killer whale
<i>Stenella attenuatus</i>	Pan-tropical spotted dolphin
<i>Stenella coeruleoalba</i>	Striped dolphin
<i>Stenella longirostris</i>	Spinner dolphin
<i>Stenella plagiодon</i>	Atlantic spotted dolphin
<i>Trichechus manatus</i>	West Indian manatee
<i>Tursiops truncatus</i>	Bottlenose dolphin



### Appendix III: Species Names Common Name to Scientific Name

#### **Marine Algae and Cyanobacteria**

Dead man's fingers	<i>Codium isthmocladum</i>
Encrusting coralline algal species	<i>Porolithon</i> spp.

#### **Higher Plants**

Balloon grass	<i>Halophila decipiens</i>
Black mangrove	<i>Lumnitzera litorea</i>
Endemic Hawaiian seagrass	<i>Halophila hawaiiana</i>
Large-leaved orange mangrove	<i>Bruguiera gymnorhiza</i>
Mangrove apple	<i>Sonneratia alba</i>
Manatee grass	<i>Syringodium filiforme</i>
Red mangrove <sup>1</sup>	<i>Rhizophora mangle</i>
Shoal grass	<i>Halodule wrightii</i>
Turtle grass	<i>Thalassia testudinum</i>

#### **Cnidarians (hard corals, soft corals)**

Artichoke coral	<i>Scolymia cubensis</i>
Black coral species	<i>Antipathes</i> spp.
Blade fire coral	<i>Millepora complanata</i>
Boulder brain coral	<i>Colpophyllia natans</i>
Boulder star coral	<i>Montastrea franksi</i>
Branching fire coral	<i>Millepora alcicornis</i>
Clubtip finger coral	<i>Porites porites</i>
Common sea fan	<i>Gorgonia ventalina</i>
Elkhorn coral	<i>Acropora palmata</i>
Elliptical star coral	<i>Dichocoenia stokesii</i>
Finger coral	<i>Porites compressa</i>
Fire coral species	<i>Millepora</i> spp.
Fused staghorn coral	<i>Acropora prolifera</i>
Golfball coral	<i>Favia fragum</i>
Great star coral	<i>Montastrea cavernosa</i>
Ivory coral species	<i>Oculina</i> spp.
Knobby brain coral	<i>Diploria clivosa</i>
Knobby zoanthid	<i>Palythoa mammillosa</i>
Lesser starlet coral	<i>Siderastrea radians</i>
Lettuce coral	<i>Agaricia agaricites</i>
Lobe coral	<i>Porites lobata</i>
Lobed star coral	<i>Montastrea annularis</i>
Massive starlet coral	<i>Siderastrea siderea</i>
Maze coral	<i>Meandrina meandrites</i>
Mustard hill coral	<i>Porites astreoides</i>
Plate coral	<i>Porites (=Synarea) rus</i>
Rice coral	<i>Montipora capitata</i>
Rough star coral	<i>Isophyllastrea rigida</i>
Smooth flower coral	<i>Eusmilia fastigiata</i>
Smooth star coral	<i>Solenastrea bournoni</i>
Snowflake coral	<i>Carijoa riisei</i>

<sup>1</sup> Considered an invasive species in Hawaii

Spiny flower coral	<i>Mussa angulosa</i>
Staghorn coral	<i>Acropora cervicornis</i>
Staghorn coral	<i>Acropora cytherea</i>
Symmetrical brain coral	<i>Diploria strigosa</i>
Table coral	<i>Acropora cytherea</i>
Ten-ray star coral	<i>Madracis decactis</i>
White encrusting zoanthid	<i>Palythoa caribaeorum</i>
Yellow pencil coral	<i>Madracis mirabilis</i>

### Sponges

Black encrusting sponge	<i>Terpios hoshinota</i>
Caribbean vase	<i>Vasum muricatum</i>
Elephant ear sponge	<i>Ianthella basta</i>
Encrusting sponge species	<i>Cliona</i> spp.
Giant barrel sponge	<i>Xestospongia muta</i>

### Polychaetes (worms)

Featherduster worm	<i>Sabellastarte sanctijosephi</i>
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### Molluscs (bivalves, gastropods)

Black-lipped pearl oyster	<i>Pinctada margaritifera</i>
Endemic gastropod	<i>Echininus viviparis</i>
Endemic Hawaiian sepiolid squid	<i>Euprymna scolopes</i>
Giant clam species	<i>Tridacna</i> spp.
Guam nerite	<i>Nerita guamensis</i> <sup>2</sup>
Queen conch	<i>Strombus gigas</i>
Pearl oyster species	<i>Pinctada</i> spp.
Topshell gastropod	<i>Trochus niloticus</i>
Turtle limpet	<i>Cellana talcosa</i>

### Echinoderms (starfish, sea urchins)

Crown-of-thorns starfish	<i>Acanthaster planci</i>
Long-spined sea urchin	<i>Diadema antillarum</i>
Rock-boring sea urchin	<i>Echinometra lucunter</i>
Slate-pencil urchin	<i>Eucidaris tribuloides</i>

### Crustaceans (lobsters, crabs)

Caribbean spiny lobster	<i>Panulirus argus</i>
Clinging crab species	<i>Mithrax</i> spp.
Coconut crab	<i>Birgus latro</i>
Spotted spiny lobster	<i>Panulirus guttatus</i>

### Fishes

Great barracuda	<i>Sphyraena barracuda</i>
Bermuda chub	<i>Kyphosus sectatrix</i>
Bicolor damselfish	<i>Stegastes partitus</i>
Black triggerfish	<i>Melichthys niger</i>
Blackspot sergeant	<i>Abudefduf sordidus</i>

<sup>2</sup> Endemic gastropod found in Guam and Northern Mariana Islands

Blacktail snapper	<i>Lutjanus fulvus</i>
Bluefin trevally jack, or Omilu	<i>Caranx melampygus</i>
Bluehead wrasse	<i>Thalassoma bifasciatum</i>
Blueline snapper	<i>Lutjanus kasmira</i>
Bluespotted grouper	<i>Cephalopholis argus</i>
Bluestriped grunt	<i>Haemulon sciurus</i>
Brown chromis	<i>Chromis multilineata</i>
Bull shark	<i>Carcharhinus leucas</i>
Bumphead parrotfish	<i>Bolbometopon muricatum</i>
Creolefish	<i>Paranthias furcifer</i>
Damselfish	<i>Stegastes planifrons</i>
Devil ray	<i>Mobula hypostoma</i>
Dragon eel	<i>Enchelycore pardalis</i>
Emperor angelfish	<i>Pomacanthus maculatus</i>
Flame angelfish	<i>Centropyge loriculus</i>
French grunt	<i>Haemulon flavolineatum</i>
Gag	<i>Mypterocephalus microlepis</i>
Galapago shark	<i>Carcharhinus galapagensis</i>
Giant grouper	<i>Epinephelus lanceolatus</i>
Giant trevally	<i>Caranx ignobilis</i>
Goatfish family	<i>Mullidae</i>
Gray snapper	<i>Lutjanus griseus</i>
Great barracuda	<i>Sphyraena barracuda</i>
Guam reef damsselfish	<i>Pomachromis gumaensis</i>
Hamlet species	<i>Hypoplectrus spp.</i>
Hammerhead shark	<i>Sphyna lewini</i>
Hardnose	<i>Caranx cryos</i>
Hawaiian black grouper	<i>Epinephelus quernus</i>
Hawaiian lionfish	<i>Pterois sphex</i>
Humphead or Napoleon wrasse	<i>Cheilinus undulatus</i>
Indo-Pacific lionfish	<i>Pterois volitans</i>
King mackerel	<i>Scomberomerus cavalla</i>
Masked goby	<i>Coryphopterus personatus</i>
Marianas rockskipper	<i>Prealticus popiae</i>
Masked angelfish	<i>Genicanthus personatus</i>
Misty grouper	<i>Epinephelus mystacinus</i>
Nassau grouper	<i>Epinephelus striatus</i>
Pacific batfish	<i>Platax orbicularis</i>
Pacific threadfin, or Moi	<i>Polydactylus sexfilis</i>
Queen parrotfish	<i>Scarus vetula</i>
Red drum	<i>Sciaenops ocellatus</i>
Red grouper	<i>Epinephelus morio</i>
Red porgy	<i>Pagrus pagrus</i>
Red snapper	<i>Lutjanus campechanus</i>
Reef butterflyfish	<i>Chaetodon sedentarius</i>
Scalloped hammerhead shark	<i>Sphyrna lewini</i>
Schoolmaster	<i>Lutjanus apodus</i>
Sergeant major	<i>Abudefduf saxatilis</i>
Sharpnose puffer	<i>Canthigaster rostrata</i>
Silk snapper	<i>Lutjanus vivanus</i>
Silky shark	<i>Carcharhinus falciformis</i>

Slippery dick	<i>Halichoeres bivittatus</i>
Smallmouth grunt	<i>Haemulon chrysargyreum</i>
Smooth dogfish	<i>Mustelus canis</i>
Smooth trunkfish	<i>Lactophrys triqueter</i>
Snowy grouper	<i>Epinephelus niveatus</i>
Spanish hogfish	<i>Bodianus rufus</i>
Speckled hind	<i>Epinephelus drummondhayi</i>
Speckled parrotfish	<i>Scarus perspicillatus</i>
Spectacled parrotfish	<i>Chlorurus perspicillatus</i>
Spotted eagle rays	<i>Aetobatus narinari</i>
Stingray species	<i>Dasyatidae</i>
Stoplight parrotfish	<i>Sparisoma viride</i>
Striped parrotfish	<i>Scarus croicensis</i>
Surgeonfish family	<i>Acanthuridae</i>
Tarpon	<i>Megalops atlanticus</i>
Three-banded anemonefish	<i>Amphiprion tricinctus</i>
Three-spot damselfish	<i>Stegastes planifrons</i>
Tiger grouper	<i>Mycteroperca tigris</i>
Tomtate	<i>Haemulon aurolineatum</i>
Vermillion snapper	<i>Rhomboplites aurorubens</i>
Warsaw grouper	<i>Epinephelus nitrigus</i>
Whale shark	<i>Rhincodon typus</i>
White grunt	<i>Haemulon plumieri</i>
Whitetip reef shark	<i>Triaenodon obesus</i>
Yellow-crowned butterflyfish	<i>Chaetodon flavocoronatus</i>
Yellow goatfish	<i>Mulloidichthys martinicus</i>
Yellow tang	<i>Zebrasoma flavescens</i>
Yellowtail snapper	<i>Oyurus chrysurus</i>

## Marine Reptiles

Banded sea snake	<i>Laticauda columbrina</i>
Green sea turtle	<i>Chelonia mydas</i>
Hawksbill turtle	<i>Eretmochelys imbricata</i>
Leatherback turtle	<i>Dermochelys coriacea</i>
Loggerhead turtle	<i>Caretta caretta</i>
Kemp's ridley	<i>Lepidochelys kempii</i>
Olive ridley	<i>Lepidochelys olivacea</i>
Yellowbellied sea snake	<i>Pelmas platurus</i>

## Birds

Brown booby	<i>Sula leucogaster</i>
Brown pelican	<i>Pelecanus occidentalis</i>
Peregrine falcon	<i>Falco peregrinus</i>

## Marine Mammals

Atlantic spotted dolphin	<i>Stenella plagiодon</i>
Bottlenose dolphin	<i>Tursiops truncatus</i>
Bryde's whale	<i>Balaenoptera edeni</i>
Caribbean monk seal	<i>Monachus tropicalis</i>

Dugong	<i>Dugong dugon</i>
Dwarf sperm whale	<i>Kogia breviceps</i>
False killer whale	<i>Pseudorca crassidens</i>
Hawaiian monk seal	<i>Monachus schauinslandi</i>
Humpback whale	<i>Megaptera novaeangliae</i>
Pan-tropical spotted dolphin	<i>Stenella attenuatus</i>
Short-finned pilot whale	<i>Globicephala macrorhynchus</i>
Long-finned pilot whale	<i>Globicephala mala</i>
Pygmy sperm whale	<i>Kogia simus</i>
Seacow	<i>Dugong dugon</i>
Sperm whale	<i>Physeter catodon</i>
Spinner dolphin	<i>Stenella longirostris</i>
Striped dolphin	<i>Stenella coeruleoalba</i>
West Indian manatee	<i>Trichechus manatus</i>



## Appendix IV: Federal Protection for U.S. Coral Reef Ecosystems

A variety of Federal legislation currently authorizes protection for aspects of coral reef ecosystems inside and outside Federal MPAs. These include the following.

- **National Marine Sanctuaries Act, 16 U.S.C. 1431 *et seq.*** Authorizes NOAA to designate areas as national marine sanctuaries and promulgates regulations for the conservation and management of those areas.
- **National Park Service Organic Act of 1916, 16 U.S.C. 1 *et seq.*** Authorizes the creation of National Parks “to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations.”
- **National Wilderness Preservation System, 16 U.S.C. 1131 *et seq.*** Authorizes designation of federally owned areas as “wilderness areas” to be administered to preserve their pristine character.
- **National Wildlife Refuge System Improvement Act of 1997, 16 U.S.C. 668dd *et seq.*** Authorizes National Wildlife Refuges to conserve fish, wildlife, and plants and their habitats; requires all Refuges to complete Comprehensive Conservation Management Plans within 15 years of enactment.
- **Sikes Act, 16 U.S.C. 670a-o.** Requires the Department of Defense to provide for conservation and rehabilitation of natural resources on military installations.
- **The Clean Water Act (CWA).** Among other objectives, the CWA regulates the discharge of dredged or fill materials into waters of the United States (marine and freshwater). It also contains provisions governing the filling or draining of wetlands (which include seagrass beds, mangroves and salt marshes).
- **The Coastal Zone Management Act (CZMA).** Through cooperation between federal and state agencies, the CZMA provides for controlled management and development of shoreline areas.
- **The Endangered Species Act (ESA).** Provides federal resources, including money and institutional support, for monitoring, conserving, and promoting the recovery of species listed as either “endangered” or “threatened”.
- **The National Environmental Policy Act (NEPA).** Environmental Impact Assessments (EIAs) or Statements (EISs) are required by NEPA for proposed projects that involve federal sponsorship or approval.
- **Lacey Act, 16 U.S.C. 3372 *et seq.*, 18 U.S.C. 42.** Makes it unlawful to import, export, sell, receive, possess, or transport wildlife taken in violation of state, federal, tribal, or foreign laws or regulations.
- **Magnuson Stevens Fishery Conservation and Management Act, 16 U.S.C. 1801 *et seq.*** Conserves and manages fish stocks throughout the 200-mile U.S. Fishery Conservation Zone by developing fishery management plans and designating essential fish habitat.

