

# IAN Symbol Libraries

## Overview

The [IAN symbol libraries](#) currently contain 3031 custom made vector symbols designed specifically for enhancing science communication skills. Download the complete set or create a custom packaged version.

Our aim is to make them a standard resource for scientists, resource managers, community groups, and environmentalists worldwide. Easily create diagrammatic representations of complex processes with minimal graphical skills. Currently downloaded by 93434 users in 245 countries and 50 U.S. states.

The IAN Symbol Libraries are provided completely **cost and royalty free**.

Please acknowledge as: *Symbols courtesy of the Integration and Application Network ([ian.umces.edu/symbols/](http://ian.umces.edu/symbols/)).*

## The Libraries Include

3031 science/ecology symbols

55 albums in 6 categories

Vector (SVG & AI) versions

Raster (PNG) version

## Acknowledgements

The IAN symbol libraries have been developed by many contributors:

Adrian Jones, Alexandra Fries, Amber O'Reilly, Annie Carew, Brianne Walsh, Caroline Donovan, Catherine Collier, Catherine Ward, Charlene Afu, Chip Chenery, Christine Thurber, Claire Sbardella, Diana Kleine, Dieter Tracey, Dvorak, Dylan Taillie, Emily Nastase, Ian Hewson, Jamie Testa, Jan Tilden, Jane Hawkey, Jane Thomas, Jason C. Fisher, Joanna Woerner, Joe Edgerton, Kate Boicourt, Kate Moore, Kate Petersen, Kim Kraeer, Kris Beckert, Lana Heydon, Lucy Van Essen-Fishman, Madeline Kelsey, Max Hermanson, Nicole Lehmer, Sally Bell, Sander Scheffers, Sara Klips, Sidney Anderson, Tim Carruthers, Tina Kister, Tori Agnew, Tracey Saxby, Trisann Bambico.

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# Ecosystems: Coastal/Marine



Australia QLD:  
Bramble Bay



Australia QLD:  
Deception Bay



Australia QLD:  
Eastern Moreton Bay



Australia QLD: Gold  
Coast



Australia QLD:  
Pumicestone  
Passage



Australia QLD:  
Southern Moreton  
Bay Islands



Australia QLD:  
Waterloo Bay



Coast to coast USA  
2D



Coastline 2D: barrier  
island with microtidal  
energy



Coastline 2D: barrier  
island with mixed  
energy



Coastline 2D:  
catchment, river,  
nearshore and  
offshore reefs



Coastline 2D: clastic  
and carbonate  
sediment



Coastline 2D: closed  
estuary and  
nearshore reefs



Coastline 2D: coastal  
floodplain



Coastline 2D: dunes  
to open ocean



Coastline 2D: estuary  
to deep reef



Coastline 2D: gradual  
5 degree slope



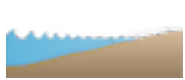
Coastline 2D:  
intertidal zone



Coastline 2D:  
nearshore reef



Coastline 2D: open  
estuary and  
nearshore reef



Coastline 2D:  
receding shoreline



Coastline 2D:  
saltwedge



Coastline 2D: sand  
dune system



Coastline 2D: sand  
dune system with  
lagoon



Coastline 2D: sea ice  
shelf



Coastline 2D: sea  
level rise



Coastline 2D: sea-  
level rise with  
continental shelf



Coastline 2D: sea-  
level rise with  
continental slope



Coastline 2D: sea-  
level rise with  
increased swell



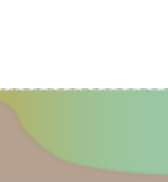
Coastline 2D:  
sheltered vs. exposed  
with calcareous  
sediments



Coastline 2D:  
sheltered vs. exposed  
with siliceous  
sediments



Coastline 2D: steep  
45 degree slope



Coastline 2D: steep  
shoreline



Coastline 2D: stepped  
shoreline with variable  
water quality



Coastline 3D: barrier  
island bar



Coastline 3D: barrier  
island lagoon system



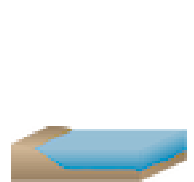
Coastline 3D: barrier  
islands



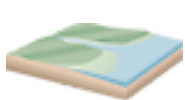
Coastline 3D: bay with  
barrier island



Coastline 3D: beach



Coastline 3D: beach  
to ocean



Coastline 3D:  
comparison high vs  
low marsh



Coastline 3D: dunes  
and water table



Coastline 3D:  
modified shoreline



Coastline 3D: mountains to open  
ocean



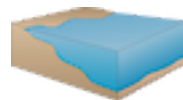
Coastline 3D: mountains to open  
ocean with upwelling



Coastline 3D:  
mountains, dam,  
island



Coastline 3D: natural  
shoreline



Coastline 3D: oblique  
beach to ocean



Coastline 3D: river  
and barrier islands



Coastline 3D: river  
comparison

# Ecosystems: Coastal/Marine



Coastline 3D: river mouths



Coastline 3D: river to ocean



Coastline 3D: rivers and barrier islands



Coastline 3D: sandy coastline



Coastline 3D: spit formation



Coastline 3D: watershed and modified coastline



Estuary 2D: barrier island



Estuary 2D: channels and offshore sand drift



Estuary 2D: closed and shallow



Estuary 2D: closed with deep channel



Estuary 2D: closed with offshore sandbars



Estuary 2D: coastal embayment



Estuary 2D: continental island and offshore reef



Estuary 2D: dunes and salt wedge



Estuary 2D: inverse salt wedge



Estuary 2D: open



Estuary 2D: open with channels and sand dunes



Estuary 2D: open with mud deposits



Estuary 2D: open with sand bar



Estuary 2D: rarely vs. permanently open



Estuary 2D: rocky catchment



Estuary 2D: salt wedge



Estuary 2D: sand bar



Estuary 2D: seasonally closed



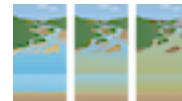
Estuary 2D: subtropical



Estuary 2D: tidally restricted



Estuary 2D: tropical with offshore reef



Estuary 3D: River Mouth Triptych



Estuary 3D: Sea-level rise diptych



Estuary 3D: braided river and mudflat



Estuary 3D: braided river mouth



Estuary 3D: modified coastline with barrier islands



Estuary 3D: river and barrier islands



Estuary 3D: stratified water column



Fiji: Lami Town



Habitat 2D: exposed sand with calcareous base



Habitat 2D: good vs. bad



Habitat 2D: intertidal mud



Habitat 2D: intertidal mudflat



Habitat 2D: protected sand



Habitat 2D: reef



Habitat 2D: sand and reef



Habitat 2D: subtidal mud



Habitat 2D: underwater shoreline



Headlands 3D: rocky



Headlands 3D: rocky with seastack



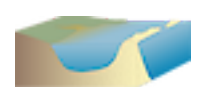
Headlands 3D: sandy



Lagoon 2D: closed and stratified



Lagoon 2D: open

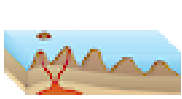


Lagoon 3D: barrier sand islands

# Ecosystems: Coastal/Marine



Ocean 2D: volcanic island with coral reef



Ocean 3D: guyot formation



Reef 2D: deep habitat



Reef 2D: exposed



Reef 2D: intertidal



Reef 2D: nearshore



Reef 2D: patch reef with coral cay and lagoon



Reef 2D: protected



Reef 2D: rocky



Reef 2D: rocky lagoon



Reef 3D: coral atoll



Reef 3D: volcanic island with barrier reef 1



Reef 3D: volcanic island with barrier reef 2



Reef 3D: volcanic island with fringing reef



Reef 3D: volcanic island with waterfall and atoll



Reef 3D: volcanic islands with reefs



USA CA: Estero Bay 3D



USA CA: Morro Bay 3D estuary and harbor



USA HI: Kalaupapa National Historical Park



USA MD VA: Chesapeake Bay 3D map



USA MD VA: Chesapeake Bay 3D map with mountains and shelf



USA MD VA: Chincoteague Bay 3D watershed



USA MD: Assawoman Bay 3D watershed



USA MD: Assawoman Bay 3D watershed (detailed)



USA MD: Isle of Wight 3D watershed



USA MD: Newport Bay 3D watershed



USA MD: Sinepuxent Bay 3D watershed



USA MD: St. Martin River 3D watershed



USA VA: York River watershed 3D



Watershed 3D: comparison good vs bad



Watershed 3D: good vs bad with mountains



Watershed 3D: good vs bad with mountains mirrored



Watershed 3D: mountains and rivers to coast



Watershed 3D: mountains to bay



Watershed 3D: mountains, dam, rivers to coast



Watershed 3D: mountains, river, and islands



Watershed 3D: mountains, rivers, and dam



Watershed 3D: mountains, rivers, dam, and reef



Watershed 3D: perched lake, water table, rocky headlands



Watershed 3D: river mouth, continental islands, and reef



Watershed 3D: river mouth, continental islands, and reef-2



Watershed 3D: river mouth, mudflat, beach, and rocky headlands



Watershed 3D: volcanic island with crater lakes and waterfalls

# Ecosystems: Desert



Desert 3D: foothills 1



Desert 3D: foothills 2



Desert 3D: interior valley



Desert 3D: mountains with dry creek and lake



Lake 2D: desert lunette



Sedona Red Rocks



USA ID: City of Rocks National Reserve



USA OR: John Day Fossil Beds National Monument



# Ecosystems: Elements



Coastal lava flow



Fire



Hills



Iceberg



Island: barrier islands



Island: barrier with mud banks



Island: coves and sandy banks



Island: mud banks



Island: sandy barrier islands



Island: steep with rocky shore



Island: volcanic crater



Lake



Lake with incoming streams



Mountains: below snowline



Mountains: mountain range



Mountains: seasonal snow



Mountains: snow peak



Mountains: snowcaps and foothills



Mountains: with saddle



Particles



Perched water table



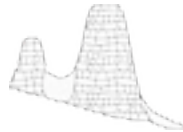
Pond



Pond 2



Reef: limestone



Reef: limestone with sand deposits



Rocks 1



Rocks 2



Rocks 3



Seastack



Waterfall 1



Waterfall 2

# Ecosystems: Freshwater



Australia QLD: Lockyer Creek



Australia QLD: Logan River



Australia QLD: Maroochy River



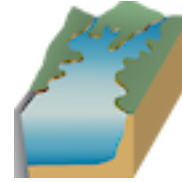
Australia QLD: Mid Brisbane River



Australia QLD: Mooloolah River



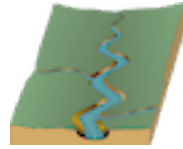
Australia QLD: Noosa River



Australia QLD: North Pine Dam



Australia QLD: Somerset Dam



Australia QLD: Stanley River



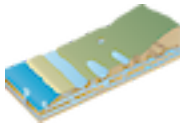
Australia QLD: Upper Brisbane River



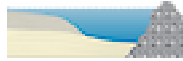
Australia QLD: Wivenhoe Dam



Canyon 3D



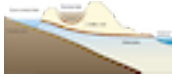
Karst 3D: cenotes, sinkholes, and coastal lagoon



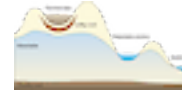
Lake 2D: glacial with deltaic deposits and terminal moraine



Lake 2D: laminated sediment



Lake 2D: perched lake and dune contact lake



Lake 2D: perched lake and water table window



Lake 2D: stratified



Lake 2D: turbidite and laminations



Lake 2D: varves



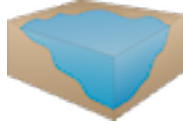
Lake 3D: oxbow lake



Lake 3D: oxbow lake formation



Lake 3D: shallow with small river



Pond 3D: freshwater



Pond 3D: muddy shore



Ponds 3D: isolated



River 2D: deep



River 2D: deep channel



River 2D: shallow



River 2D: water table high



River 2D: water table low



River 3D: braided coastal



River 3D: braided with incoming streams



River 3D: braided with mountains



River 3D: catchment



River 3D: comparison healthy vs eutrophic



River 3D: comparison natural vs. developed



River 3D: cross section 1



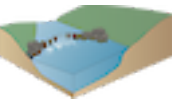
River 3D: cross section 2



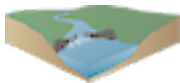
River 3D: cross section 3



River 3D: cross section 4



River 3D: cross vane weir 1



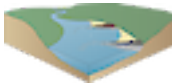
River 3D: cross vane weir 2



River 3D: cutaway



River 3D: floodplain



River 3D: flow deflector



River 3D: foothills and sandy riverbed



River 3D: foothills to coast



River 3D: groundwater transport



River 3D: meandering with sandy banks

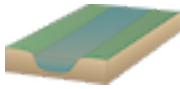
# Ecosystems: Freshwater



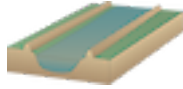
River 3D: mountain and lake



River 3D: mountains and plain



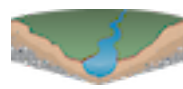
River 3D: navigable channel



River 3D: navigable channel with levees



River 3D: sandy bottom



River 3D: sediment layers



River 3D: two river confluence



River 3D: urban paving with low water level



River 3D: urban paving with mid water level



River 3D: watershed with mountains



River 3D: watershed with mountains and water table



River 3D: with stream



River valley 2D: steep and shallow slope



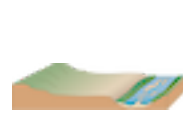
River valley 3D: gentle slope



River valley 3D: steep slope



Stream 3D: aquiclude and spring



Stream 3D: braided



Stream 3D: eroding banks



Stream 3D: healthy



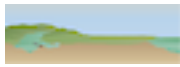
Stream 3D: river valley and water table



Stream 3D: sandy banks in valley



Stream 3D: springs and perched water table



Stream 3D: unhealthy



Water table 3D

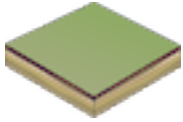
# Ecosystems: Grassland



Plain 3D: mountains and lake



Plain 3D: simple



Plain 3D: simple with soil layers



Plains 3D: mountains, aquifer, and braided river system



Plains 3D: mountains, caves, sandstone outcrop, aquifer

# Ecosystems: Maps



Australia



Australia: Moreton Bay



Australia: line map



Fiji: Lami Town



USA



USA AL FL: Perdido Bay



USA AL: Mobile Bay



USA CA: Humbolt Bay



USA CA: Monterey Bay



USA CA: San Diego Bay



USA CA: San Francisco Bay



USA CA: San Francisco, San Pablo, Suisan Bays



USA CA: San Pedro Bay



USA CA: Santa Monica Bay



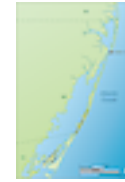
USA CA: Tomales Bay



USA CT NY: Long Island Sound



USA CT: Connecticut River



USA DE MD VA: Coastal Bays



USA DE MD VA: Coastal Bays watershed



USA DE MD VA: Coastal Bays watershed locator map



USA DE MD VA: Delmarva



USA DE MD VA: Delmarva line map



USA DE NJ: Delaware Bay



USA DE: Delaware Inland Bays



USA FL: Apalachee Bay



USA FL: Apalachicola Bay



USA FL: Biscayne Bay



USA FL: Caloosahatchee River



USA FL: Charlotte Harbor



USA FL: Choctawhatchee Bay



USA FL: Florida Bay



USA FL: Indian River



USA FL: North Ten Thousand Islands



USA FL: Pensacola Bay



USA FL: Rookery Bay



USA FL: Sarasota Bay



USA FL: South Ten Thousand Islands



USA FL: Southern Florida



USA FL: St. Andrew Bay



USA FL: St. Johns River



USA FL: Suwannee River



USA FL: Tampa Bay



USA GA FL: St. Marys River and Cumberland Sound



USA GA SC: Savannah River



USA GA: Altamaha River



USA GA: Ossabaw Sound



USA GA: St. Andrews and St. Simons Sounds



USA GA: St. Catherines and Sapelo Sounds



USA LA MS: West Mississippi Sound



USA LA TX: Sabine Lake

# Ecosystems: Maps



USA LA: Atchafalaya and Vermillion Bays



USA LA: Barataria Bay



USA LA: Breton and Chandeleur Sound



USA LA: Calcasieu Lake



USA LA: Lake Borgne



USA LA: Lake Pontchartrain



USA LA: Manchac Swamp Bridge



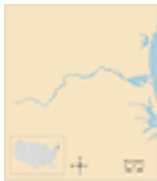
USA LA: Mermentau River



USA LA: Mississippi River



USA LA: Terrebonne and Timbalier Bays



USA MA NH: Merrimack River



USA MA: Boston Harbor



USA MA: Buzzards Bay



USA MA: Cape Cod Bay



USA MA: Massachusetts Bay



USA MA: Plum Island Sound



USA MD VA: Chesapeake Bay



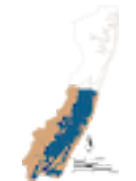
USA MD VA: Chesapeake Bay line map



USA MD VA: Chesapeake Bay watershed locator map



USA MD VA: Chincoteague Bay watershed



USA MD VA: Chincoteague Bay watershed locator map



USA MD VA: Chincoteague and Sinepuxent Bays



USA MD: Assawoman Bay watershed



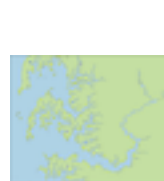
USA MD: Assawoman Bay watershed locator map



USA MD: Chester River



USA MD: Choptank River 1



USA MD: Choptank River 2



USA MD: Choptank River watershed locator map



USA MD: Isle of Wight and Assawoman Bay



USA MD: Isle of Wight watershed



USA MD: Isle of Wight watershed locator map



USA MD: Lower Eastern Shore watershed locator map



USA MD: Lower Western Shore watershed locator map



USA MD: Newport Bay watershed



USA MD: Newport Bay watershed locator map



USA MD: Patapsco and Back Rivers watershed locator map



USA MD: Patuxent River



USA MD: Patuxent River watershed locator map



USA MD: Potomac River



USA MD: Potomac River watershed locator map



USA MD: Sinepuxent Bay watershed



USA MD: Sinepuxent Bay watershed locator map



USA MD: St. Martin River watershed



USA MD: St. Martin River watershed locator map



USA MD: Tangier and Pocomoke Sounds



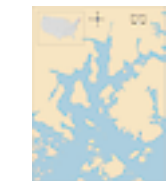
USA MD: Upper Eastern Shore watershed locator map



USA MD: Upper Western Shore watershed locator map



USA ME NH: Great Bay



USA ME: Blue Hill Bay



USA ME: Casco Bay

# Ecosystems: Maps



USA ME: Damariscotta River



USA ME: Englishman and Machias Bays



USA ME: Kennebec and Androscoggin Rivers



USA ME: Muscongus Bay



USA ME: Narraguagus Bay



USA ME: Penobscot Bay



USA ME: Saco Bay



USA ME: Sheepscot Bay



USA ME: St. Croix River and Cobscook Bay



USA ME: Wells Bay



USA MS: East Mississippi Sound



USA NC: Albemarle and Pamlico Sounds



USA NC: Bogue Sound



USA NC: Cape Fear River



USA NC: Neuse River



USA NC: New River



USA NC: Pamlico and Pungo Rivers



USA NJ NY: Hudson River and Raritan Bay



USA NJ: Barnegat Bay



USA NJ: New Jersey Inland Bays



USA NY: Gardiners Bay



USA NY: Great South Bay



USA OR: Coos Bay



USA OR: Coquille River



USA OR: Tillamook Bay



USA RI: Narragansett Bay



USA SC: Broad River



USA SC: Charleston Harbor



USA SC: St. Helena Sound



USA SC: Stono and North Edisto Rivers



USA SC: Winyah Bay



USA TX: Aransas Bay



USA TX: Baffin Bay



USA TX: Brazos River



USA TX: Corpus Christi Bay



USA TX: Galveston Bay



USA TX: Lower Laguna Madre



USA TX: Matagorda Bay



USA TX: San Antonio Bay



USA TX: Upper Laguna Madre



USA VA: Elizabeth River watershed locator map



USA VA: James River



USA VA: James River watershed locator map



USA VA: Rappahannock River



USA VA: Rappahannock River watershed locator map



USA VA: York River



USA VA: York River watershed



USA VA: York River watershed locator map



USA WA: Bellingham, Padilla, Samish Bays



USA WA: Hood Canal

# Ecosystems: Maps



USA WA: Port Orchard Sound



USA WA: Puget Sound



USA WA: Sequim and Discovery Bays



USA WA: Skagit Bay and Whidbey Basin



USA WA: South Puget Sound



USA WA: Willapa Bay



USA: Chesapeake Bay watershed



USA: line map



USA: states



# Ecosystems: Meteorology/Climate



Cold Front



Constellation:  
Pleiades



High clouds:  
Cirrocumulus



High clouds:  
Cirrostratus



High clouds: Cirrus



Low clouds:  
Cumulonimbus 1



Low clouds: Cumulus  
1



Low clouds:  
Stratocumulus 1



Low clouds: Stratus 1



Middle clouds:  
Altocumulus 1



Middle clouds:  
Altostratus 1



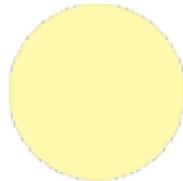
Middle clouds:  
Nimbostratus 1



Moon



Moon: first quarter



Moon: full



Moon: last quarter



Moon: new



Moon: waning  
crescent



Moon: waning  
gibbous



Moon: waxing  
crescent



Moon: waxing  
gibbous



Weather vane



Weather: cyclone (S  
Hemisphere)



Weather: hurricane (N  
Hemisphere)



Weather: rain



Weather: rain 2



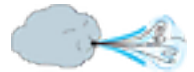
Weather: sheeting  
rain



Weather: snow



Weather: solar  
radiation



Weather: wind 1



Weather: wind 2

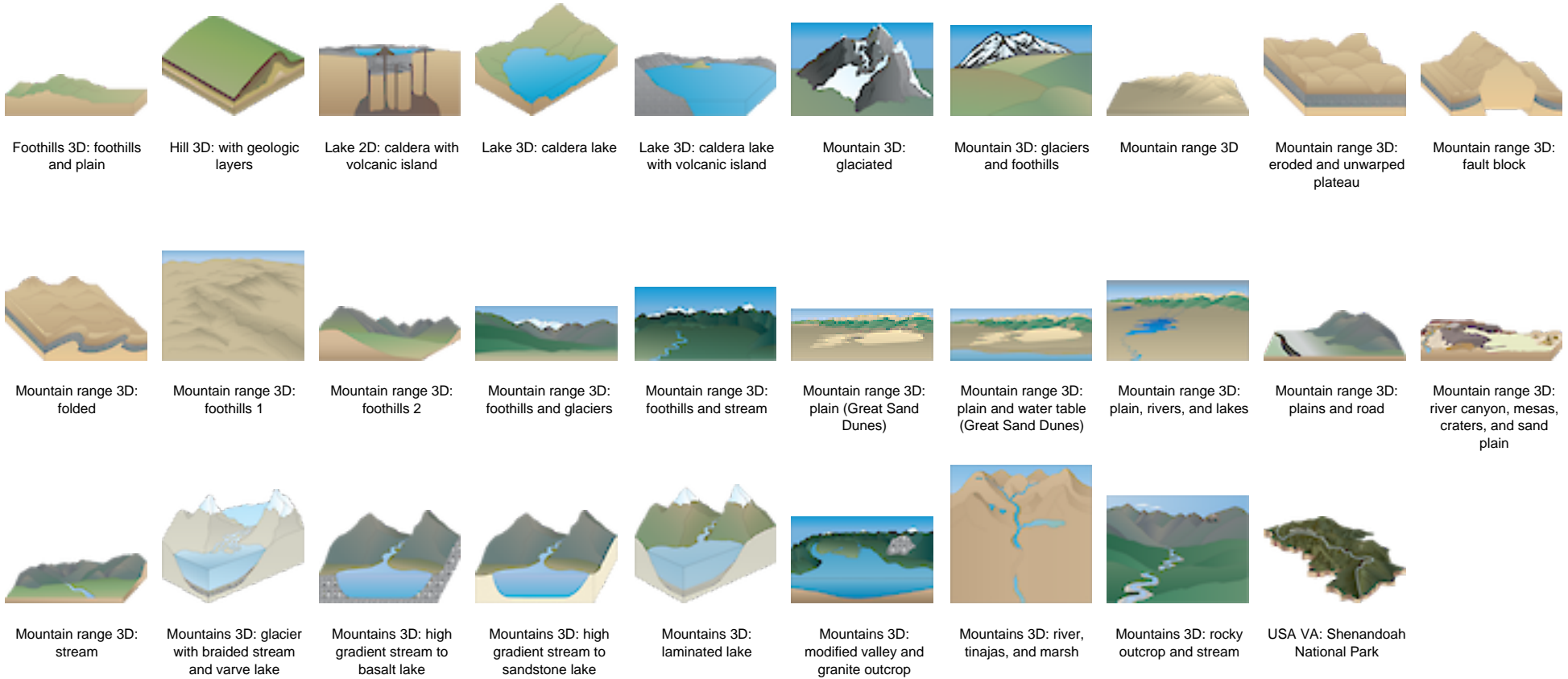


Weather: wind 3



Weather: wind vector

# Ecosystems: Mountains/Tundra



# Ecosystems: Other



Meteorite 3D: crater



Meteorite 3D: crater lake



Plate tectonics:  
subduction zone and  
mid-ocean ridge



Volcano 3D: caldera



Volcano 3D: cinder  
cone



Volcano 3D:  
composite



Volcano 3D: dome



Volcano 3D: fissure



Volcano 3D: shield

# Fauna: Amphibians



*Ambystoma maculatum* (Spotted Salamander)



Anura (Frog) lifecycle: day 01 egg



Anura (Frog) lifecycle: day 03-04 tailbud



Anura (Frog) lifecycle: day 06 tadpole with external gills



Anura (Frog) lifecycle: day 09 tadpole with internal gills



Anura (Frog) lifecycle: day 12 tadpole with operculum



Anura (Frog) lifecycle: day 70 tadpole with hindlimbs



Anura (Frog) lifecycle: day 84 tadpole with forelimbs



Anura (Frog) lifecycle: day 84+ tadpole metamorphosis



Anura (Frog) lifecycle: day 84+ young frog



*Bufo americanus* (American Toad) : adult



*Dendrobates pumilio* (Dart-poison Frog) : adult



*Eleutherodactylus coqui* (Coqui Frog)



*Eurycea bislineata* (Northern Two-lined Salamander)



*Hyla cinerea* (American Green Tree Frog) : adult



*Litoria caerulea* (Australian Green Tree Frog) : adult



*Plethodon shenandoah* (Shenandoah Salamander)



*Pseudotriton ruber* (Northern Red Salamander)



*Rana clamitans melanota* (Northern Green Frog) : adult



*Rana palustris* (Pickerel Frog) : adult

# Fauna: Birds



'Akohekohe (palmeria dolei)



'O'mao (myadestes obscurus)



Acridotheres tristis (Common Myna)



Aegolius acadicus (Northern Saw-whet Owl)



Agelaius phoeniceus (Red-winged Blackbird)



Ajaja ajaja (Roseate Spoonbill)



Akiapola'au (hemignathus munroi)



Ammodramus maritimus (Seaside Sparrow)



Ammodramus nelsoni (Nelson's Sparrow)



Anas penelope (Eurasian Wigeon)



Anas platyrhynchos (Mallard Duck)



Anas rubripes (American Black Duck)



Anseranas semipalmata (Magpie Goose) 1



Anseranas semipalmata (Magpie Goose) 2



Aptenodytes forsteri (Emperor Penguin)



Ardea herodias (Great Blue Heron)



Ardea herodias (Great Blue Heron) 2



Bird box



Bird nest with eggs



Branta bernicla (Atlantic Brant Goose)



Branta canadensis (Canada Goose)



Buteo lineatus (Red-shouldered Hawk)



Buteo rufinus (Long-legged Buzzard)



Calidris ferruginea (Curlew Sandpiper)



Calidris spp. (Sandpiper)



Cardinalis cardinalis (Northern Cardinal)



Casuaris spp. (Cassowary)



Catharus bicknelli (Bicknell's Thrush)



Centrocercus spp. (Sage Grouse)



Charadrius alexandrinus (Snowy Plover)



Charadrius melodus (Piping Plover) 1



Charadrius melodus (Piping Plover) 2



Charadrius montanus (Mountain Plover)



Coccyzus americanus (Yellow-billed Cuckoo)



Coccyzus minor (Mangrove Cuckoo)



Coereba flaveola (Bananaquit)



Columba livia (Rock Pigeon)



Cygnus atratus (Black Swan)



Cygnus buccinator (Trumpeter Swan)



Cygnus olor (Mute Swan) 1



Cygnus olor (Mute Swan) 2



Cygnus olor (Mute Swan) 3



Dacelo novaeguineae (Laughing Kookaburra)



Dead bird



Dendroica cerulea (Cerulean Warbler)



Dendroica discolor (Prairie Warbler)



Dendroica petechia (Yellow Warbler)



Dolichonyx oryzivorus (Bobolink)



Drepanis coccinea (Scarlet Honeycreeper)



Dromaius novaehollandiae (Emu)

# Fauna: Birds



# Fauna: Birds



*Phoenicopterus minor*  
(Lesser Flamingo) :  
flying



*Phoenicopterus minor*  
(Lesser Flamingo) :  
standing



*Phoenicopterus minor*  
(Lesser Flamingo) :  
walking



*Phoenicopterus ruber*  
(American Flamingo)  
1



*Phoenicopterus ruber*  
(American Flamingo)  
2



*Phoenicopterus ruber*  
(American Flamingo)  
3



*Picoides pubescens*  
(Downy Woodpecker)



*Platalea* spp.  
(Spoonbill)



*Pluvialis fulva* (Pacific  
Golden Plover)



Po'ouli  
(*melamprosops  
phaesoma*)



*Poecile atricapillus*  
(Black-capped  
Chickadee)



*Protonotaria citrea*  
(Prothonotary  
Warbler)



*Ptilinopus pelewensis*  
(Palau Fruit-dove)



*Recurvirostra  
Americana* (American  
Avocet) : summer  
plumage



*Recurvirostra  
Americana* (American  
Avocet) : winter  
plumage



*Recurvirostra  
novaehollandiae* (Red-  
necked Avocet) 1



*Recurvirostra  
novaehollandiae* (Red-  
necked Avocet) 2



*Recurvirostra  
novaehollandiae* (Red-  
necked Avocet) : flock



*Rostrhamus sociabilis*  
(Snail Kite)



*Rynchops niger*  
(Black Skimmer)



*Spiza americana*  
(Dickcissel)



*Spizella pusilla* (Field  
Sparrow)



*Sterna maximus*  
(Royal Tern)



*Sterna* spp. (Tern)



*Sternula antillarum*  
(Least Tern)



*Strix occidentalis*  
(Spotted Owl)



*Strix varia* (Barred  
Owl)



*Sturnella neglecta*  
(Western  
Meadowlark)



*Todiramphus chloris*  
(Collared Kingfisher)



*Trichoglossus  
haematodus*  
(Rainbow Lorikeet)



*Turdus migratorius*  
(American Robin)



*Vermivora  
chrysoptera* (Golden-  
winged warbler)



*Vireo altiloquus* (Black-  
whiskered Vireo)

# Fauna: Cnidaria



Acropora cervicornis  
(Staghorn Coral)



Acropora cervicornis:  
bleached



Acropora palmata  
(Elkhorn Coral) 1



Acropora palmata  
(Elkhorn Coral) 2



Acropora spp



Acropora: black band  
disease



Acropora: bleached 1



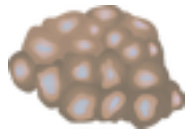
Acropora: bleached 2



Acropora: brown band  
disease



Acropora: fragment



Brain coral (Faviidae)  
1



Brain coral (Faviidae)  
2



Branching coral



Branching coral:  
juvenile



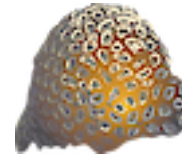
Catostylus mosaicus  
(Jelly Blubber)



Coral larva



Coral polyp



Encrusting coral



Gorgonian: sea fan



Gorgonian: sea whip



Heliopora coerulea  
(Blue Coral)



Hydra



Hydra: budding



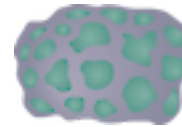
Jellyfish



Lobophyllia spp.  
(Brain Coral)



Moerisia spp.  
(Jellyfish)



Montastrea spp.  
(Brain Coral)



Mushroom coral  
(Fungia Spp.)



Mushroom coral  
(Fungiidae)



Octocoral  
(Octocorallia)



Plate coral 1



Plate coral 2



Plate coral 3



Plate coral: crown of  
thorns damage



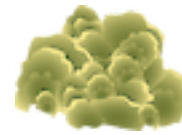
Platygyra spp. (Brain  
Coral)



Pocillopora meandrina  
(Cauliflower Coral)



Porites (Finger Coral)



Porites lobata (lobe  
coral)



Porites lobata:  
bleached



Sarcophyton spp



Sea anemone 1



Sea anemone 2



Soft coral



Tubastrea spp. 1 (Sun  
Coral)



Tubastrea spp. 2 (Sun  
Coral)



# Fauna: Crustaceans



Acartia spp.  
(Copepod)



Amphipod



Aratus pisonii  
(Mangrove Tree Crab)



Barnacle: closed



Barnacle: open



Calcinus verrilli  
(Verrilli's Hermit Crab)



Callinassa spp.  
(Burrowing Mud Shrimp)



Callinectes sapidus  
(Blue Crab) : adult 1



Callinectes sapidus  
(Blue Crab) : adult 2



Callinectes sapidus  
(Blue Crab) : coupling



Callinectes sapidus  
(Blue Crab) : egg-bearing female



Callinectes sapidus  
(Blue Crab) : eggs



Callinectes sapidus  
(Blue Crab) : female ventral view



Callinectes sapidus  
(Blue Crab) : first crab



Callinectes sapidus  
(Blue Crab) : juvenile



Callinectes sapidus  
(Blue Crab) : male dorsal view



Callinectes sapidus  
(Blue Crab) : male ventral view



Callinectes sapidus  
(Blue Crab) : megalopa 1



Callinectes sapidus  
(Blue Crab) : megalopa 2



Callinectes sapidus  
(Blue Crab) : ventral view adolescent female



Callinectes sapidus  
(Blue Crab) : zoea 1



Callinectes sapidus  
(Blue Crab) : zoea 2



Copepod 1



Crab zoea



Crayfish



Crustacean: juvenile



Crustacean: nauplius



Daphnia pulex (Water Flea)



Gammarus spp.  
(Amphipod)



Goniopsis cruentata  
(Mangrove Crab)



Grapsus tenuicrustatus (Thin-shelled Rock Crab)



Hermit Crab



Homarus gammarus  
(European Lobster)



Macrobrachium jelskii  
(Agar River Prawn)



Menippe mercenaria  
(Florida Stone Crab)



Mictyris spp. (Soldier Crab) 1



Mictyris spp. (Soldier Crab) 2



Mysid spp



Oithona spp



Pachygrasus marmoratus (Marbled Rock Crab)



Panulirus argus  
(Spiny Lobster) : phyllosoma



Panulirus argus  
(Spiny Lobster) : puerulus



Panulirus argus  
(Spiny Lobster) eggs



Panulirus argus (spiny lobster) : frontal view



Panulirus argus (spiny lobster) : side view



Paralanus spp



Penaeus monodon  
(Tiger Prawn) : adult



Prawn shrimp



Rock Lobster



Stomatopod

# Fauna: Crustaceans



*Uca annulipes*  
(Mangrove Fiddler  
Crab)



*Uca* spp. (Fiddler  
Crab)



*Uca* spp. (Fiddler  
Crab) 2



*Uca* spp. (Fiddler  
Crab) : anterior view



*Uca thayeri*  
(Mangrove Fiddler  
Crab)



copepod2

# Fauna: Echinoderms



Acanthaster planci  
(Crown-of-Thorns  
starfish)



Diadema antillarum  
(black sea urchin)



Echinothrix diadema  
(Long Spined Urchin)



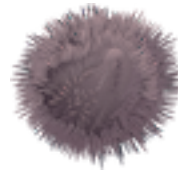
Holothurian 1



Holothurian 2



Linckia laevigata  
(Blue Linckia)



Lytechinus variegatus  
(Variegated Sea  
Urchin)



Ophiopholis aculeata  
(Daisy Brittle Star)



Pteraster tessalatus  
(Cushion Star)



Pycnopodia  
helianthoides  
(Sunflower Seastar)



Seastar 1



Seastar 2



Seastar 3

# Fauna: Fish



*Acanthurus achilles*  
(Achilles Tang)



*Acanthurus lineatus*  
(Striped Surgeon Fish)



*Acanthurus nigrofuscus* (Brown Surgeonfish)



*Acanthurus triostegus*  
(Convict Tang)



*Acipenser oxyrinchus*  
(Atlantic Sturgeon)



*Aldrichetta forsteri*  
(Yellow-eye Mullet)



*Alosa aestivalis*  
(Blueback Herring)



*Alosa mediocris*  
(Hickory Shad)



*Alosa pseudoharengus*  
(Alewife)



*Alosa sapidissima*  
(American Shad)



*Ammodytes dubius*  
(Northern Sand Lance)



*Amniataba caudavittata*  
(Yellowtail trumpeter)



*Amphiprion* spp.  
(Clownfish)



*Anchoa mitchilli* (Bay Anchovy)



*Anchoa mitchilli* (Bay Anchovy) : juvenile



*Anguilla rostrata*  
(American Eel)



*Anguilla rostrata*  
(American Eel) : elver



*Anguilla rostrata*  
(American Eel) : glass eel



*Anguilla rostrata*  
(American Eel) : leptcephalus



*Anguilla rostrata*  
(American Eel) : silver



*Anguilla rostrata*  
(American Eel) : yellow



*Apolemichthys trimaculatus* (Flagfin Angelfish)



*Aprion virescens*  
(Green Jobfish) : adult



*Arctogadus glacialis*  
(Arctic Cod)



*Argyrosomus* spp.  
(Mulloway)



*Arius graeffei* (Fork-tailed Catfish)



*Arrhamphus sclerolepis* (Snub-nosed Garfish)



*Arripis georgianus*  
(Australian Herring)



*Atherinomorus duodecimalis*  
(Tropical silverside)



*Bairdiella chrysoura*  
(American Silver Perch)



*Balistapus undulatus*  
(Orange-lined Triggerfish)



*Balistes capriscus*  
(Gray Triggerfish)



*Belone belone*  
(Garfish)



*Bidyanus bidyanus*  
(Silver Perch)



*Bolbometopon muricatum* (Green Humphead Parrotfish)



*Brachionichthys hirsutus* (Spotted Handfish)



*Brevoortia tyrannus*  
(Atlantic Menhaden)



*Brevoortia tyrannus*  
(Atlantic Menhaden) : juvenile



*Caranx ignobilis*  
(Giant Trevally)



*Carcharhinus leucas*  
(Bull Shark) 1



*Carcharhinus leucas*  
(Bull Shark) 2



*Carcharhinus melanopterus*  
(Blacktip Reef Shark)



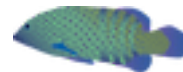
*Carcharhinus plumbeus* (Sandbar Shark)



*Centropomus undecimalis* (Common Snook)



*Centropristis striata*  
(Black Sea Bass)



*Cephalopholis argus*  
(Blue-spotted Grouper)



*Cephalopholis miniata*  
(Vermillion Sea Bass)



*Chaetodon lineolatus*  
(Lined Butterflyfish)



*Chanos chanos*  
(Milkfish) 1



*Chanos chanos*  
(Milkfish) 2

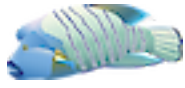
# Fauna: Fish



Chasmodes bosquianus (Striped Blenny)



Cheilinus spp. 1



Cheilinus spp. 2



Cheilinus undulatus (Humphead Wrasse) : female



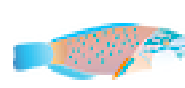
Cheilinus undulatus (Humphead Wrasse) : male



Chitala ornata (Clown knifefish)



Chloroscombrus chrysurus (Atlantic Bumper)



Chlorurus spilurus (Bullethead Parrotfish)



Chromis chromis (Mediterranean Chromis)



Cnidoglanis macrocephalus (Cobbler)



Coregonus spp. (Cisco)



Coris julis (Mediterranean Rainbow Wrasse)



Cynoscion nebulosus (Spotted Seatrout)



Cynoscion regalis (Weakfish)



Cyprinus carpio (Common Carp)



Cypselurus callopterus (Ornamented Flying Fish)



Dascyllus aruanus (Whitetail dascyllus)



Dasyatis americana (Southern Stingray) 1



Dasyatis americana (Southern Stingray) 2



Diapterus plumieri (Striped Mojarra)



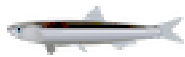
Diodon hystrix (Spot-fin Porcupinefish)



Diplodus vulgaris (Common Two-banded Seabream)



Elops saurus (Ladyfish)



Engraulis australis (Australian Anchovy)



Epinephelus fuscoguttatus (Brown-marbled Grouper)



Epinephelus itajara (Atlantic Goliath Grouper) 1



Epinephelus itajara (Atlantic Goliath Grouper) 2



Epinephelus malabaricus (Malabar grouper)



Epinephelus tukula (Potato Cod)



Esox lucius (Northern Pike)



Esox niger (Chain Pickerel)



Fish school-1



Fish school-2



Fish school-3



Fundulus heteroclitus (Mummichog) : female



Fundulus heteroclitus (Mummichog) : male



Gadus morhua (Atlantic Cod)



Galeocerdo cuvier (Tiger Shark)



Gerres subfasciatus (Silver Biddy)



Ginglymostoma cirratum (Nurse Shark)



Gobiesox strumosus (Skilletfish)



Gobiomorus dormitor (Big Mouth Sleeper)



Gobiosoma bosc (Naked Goby)



Haemulon plumieri (White Grunt)



Hippocampus erectus (Lined Seahorse)



Hippocampus spp. (Seahorse)



Hyperlophus vittatus (Sandy Sprat)



Hypophthalmichthys molitrix (Silver Carp)

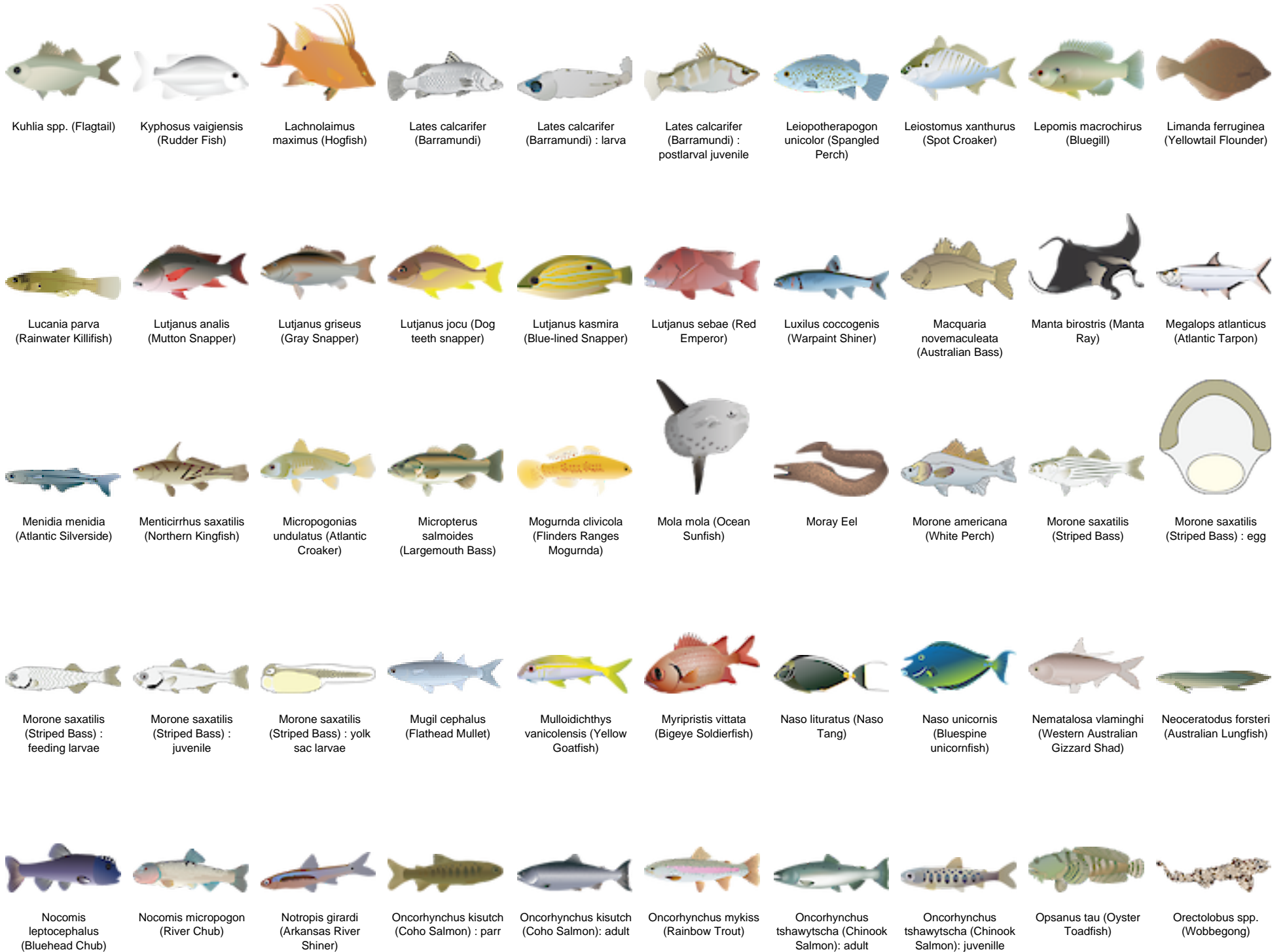


Hypostomus plecostomus (Armored Catfish)



Hypsoblennius hentzi (Feather Blenny)

# Fauna: Fish



# Fauna: Fish



Oreochromis mossambicus (Mozambique Tilapia)



Pagrus auratus (Australasian Snapper)



Paralichthys californicus (California Halibut)



Paralichthys dentatus (Summer Flounder)



Paralichthys dentatus (Summer Flounder) : juvenile



Paralichthys dentatus (Summer Flounder) : larva



Pelates sexlineatus (Six-lined Trumpeter)



Perca flavescens (Yellow Perch)



Phoxinus eos (Northern Redbelly Dace)



Phycodurus spp. (Leafy Sea Dragon)



Platycephalus spp. (Flathead)



Plectorhynchus chaetodonoides (Spotted Sweetlips) : juvenile



Plectorhynchus polytaenia (Ribboned Sweetlips)



Plectropomus areolatus (Squaretail Coralgrouper)



Plectropomus leopardus (Coral Trout)



Plectropomus oligacanthus (Highfin Coralgrouper)



Plectropomus spp. (Coral Trout)



Pleuronectes platessa (European Plaice)



Pomacanthus imperator (Emperor Angelfish)



Pomatomus saltatrix (Bluefish)



Pomatoschistus minutus (Sand Goby)



Prinotus carolinus (Northern Seabob)



Pristiophorus spp. (Saw Shark)



Pristis pectinata (Smalltooth Sawfish)



Pseudocaranx dentex (White Trevally)



Pterois volitans (Red Lionfish)



Ptychocheilus grandis (Sacramento Pikeminnow)



Rhabdosargus sarba (Tarwhine)



Rhincodon typus (Whale Shark)



Rhinecanthus rectangulus (Wedgetail Triggerfish)



Rhinichthys atronasus (Blacknose Dace)



Rhinoptera bonasus (Cownose Ray)



Rivulus marmoratus (Mangrove Killifish)



Salmo salar (Atlantic Salmon)



Salmo salar (atlantic salmon) alevin



Salmo salar (atlantic salmon) eggs



Salmo salar (atlantic salmon) fry



Salmo salar (atlantic salmon) parr



Salmo salar (atlantic salmon) smolt



Salmo trutta (Brown Trout)



Salvelinus alpinus (Arctic Char)



Salvelinus confluentus (Bull Trout)



Salvelinus fontinalis (Brook Trout)



Sander vitreus (Yellow Walleye)



Sarpa salpa (Cow Bream)



Scaphirhynchus albus (Pallid Sturgeon)



Scarus spp. (Parrotfish)



Sciaenops ocellatus (Red Drum)



Scomberomorus cavalla (King Mackerel)



Scomberomorus munroi (Australian Spotted Mackerel)

# Fauna: Fish



*Scorpaenichthys marmoratus*  
(Cabezon)



*Sebastes carnatus*  
(Gopher Rockfish)



*Sebastes crameri*  
(Darkblotched Rockfish)



*Serranus cabrilla*  
(Comber)



*Serranus scriba*  
(Painted Comber)



Shark



*Sicydium plumieri*  
(Sirajo Goby)



*Siganus spinus*  
(Scribbled Rabbit Fish)



*Siganus* spp.  
(Rabbitfish)



*Sillaginodes punctata*  
(King George Whiting)



*Sillago ciliata* (Sand Whiting)



*Sphoeroides maculatus* (Northern Puffer)



*Sphyrna* spp.  
(Barracuda)



*Sphyrna* spp.  
(Hammerhead Shark)



*Spondyliosoma cantharus* (Black Seabream)



*Stolephorus commersonii*  
(Commerson's Anchovy)



*Symphodus rostratus*



*Tandanus tandanus*  
(Eel-tailed Catfish)



*Thunnus albacares*  
(Yellowfin Tuna)



*Triaenodon obesus*  
(Whitip Reef Shark)



*Trinectes maculatus*  
(Hogchoker)



*Urophycis regia*  
(Spotted Hake)



*Zanclus cornutus*  
(Moorish Idol)



*Zebrasoma flavescens* (Yellow Tang)



*Zebrasoma scopas*  
(Brown Scopas Tang)



*Zeus faber* (John Dory)



generic fish



# Fauna: Insects/Arachnids



Actias luna (Luna Moth)



Ant



Anthonomus grandis (Boll Weevil)



Bee



Beetle



Caddisfly : adult



Caddisfly : larva



Caddisfly : larva in case



Caterpillar



Centipede



Ciccindela dorsalis media (Eastern Beach Tiger Beetle)



Ciccindela theatina (Tiger Beetle)



Coccinella transversalis (Ladybird Beetle)



Daihinibaenetes giganteus (Giant Sand Treader Camel Cricket)



Danaus plexippus (Monarch Butterfly)



Dendroctonus ponderosae (Mountain Pine Beetle) 1



Dendroctonus ponderosae (Mountain Pine Beetle) 2



Dermatophagoides pteronyssinus (House Dust Mite)



Dragonfly : adult



Dragonfly : nymph



Eotetranychus sexmaculatus (Mite)



Firefly



Fly



Fossil: bee



Fossil: moth



Galerucella pusilla (Golden Loosestrife Beetle)



Grasshopper



Latrodectus hasselti (Redback Spider)



Lymantria dispar (Gypsy Moth)



Lymantria dispar (Gypsy Moth) : caterpillar



Mayfly : adult



Mayfly : larva



Mosquito 1



Mosquito 2



Ornithoptera priamus (King Priamo's Birdwing)



Papilio glaucus (Eastern Tiger Swallowtail Butterfly)



Papilio ulysses (Ulysses Butterfly)



Praying mantis



Problema bulenta (Rare Skipper)



Rhyothemis graphiptera (Banded Flutterer)



Scorpion



Solenopsis invicta (Red Imported Fire Ant)



Solenopsis spp. (Red Ant)



Spider web



Stonefly : adult



Stonefly : larva



Strymon melinus (Grey Hairstreak)

# Fauna: Mammals



*Alluropoda melanoleuca* (Panda)



*Alces alces* (Moose)



*Antilocapra americana* (Pronghorn deer)



*Antilope cervicapra* (Blackbuck Antelope)



*Arctocephalus pusillus* (Brown Fur Seal)



*Balaena mysticetus* (Bowhead Whale)



*Balaenoptera borealis* (Sei Whale)



*Bison bison* (American Bison)



*Bos taurus* (Bull)



*Bos taurus* (Cow) 1



*Bos taurus* (Cow) 2



*Bos taurus* (Cow) 3



*Bos taurus* (Cow) 4



*Bos taurus* (Cow) 5



*Bos taurus* (Cow) 6



*Bos taurus* (Cow) 7



*Bos taurus* (Cow) : from above 1



*Bos taurus* (Cow) : from above 2



*Bos taurus* (Cow) : from above 3



*Bos taurus* (Hereford Steer)



*Bos taurus* (Longhorn Steer)



*Camelus dromedarius* (Arabian Camel)



*Canis latrans* (Coyote)



*Canis lupus familiaris* (Dog)



*Canis lupus familiaris* (Dog) : feces



*Capra aegagrus hircus* (Goat)



*Castor canadensis* (North American Beaver)



*Castor canadensis* (North American Beaver) : dam



*Castor canadensis* (North American Beaver) : hut



*Cervus elaphus* (Red Deer) : buck



*Cervus elaphus* (Red Deer) : doe



*Cervus nippon* (Sika Deer) : buck



*Cervus nippon* (Sika Deer) : doe



*Chaetodipus hispidus* (Hispid Pocket Mouse)



*Cynomys* spp. (Prairie Dog)



*Dipodomys ordii* (Kangaroo Rat)



*Dugong dugon* (Dugong) 1



*Dugong dugon* (Dugong) 2



*Enhydra lutris* (Sea Otter) 1



*Enhydra lutris* (Sea Otter) 2



*Equus ferus caballus* (Horse) 1



*Equus ferus caballus* (Horse) 2



*Equus ferus caballus* (Horse) : feces



*Equus ferus caballus* (Pony) 1



*Equus ferus caballus* (Pony) 2



*Equus quagga* (Plains Zebra)



*Eschrichtius robustus* (Gray Whale)



*Eubalaena glacialis* (Right Whale)



*Euderma maculatum* (Spotted Bat)



*Felis catus* (Cat) : domestic

# Fauna: Mammals



# Fauna: Mammals



*Sus scrofa* (wild boar)



*Sus scrofa domestica*  
(domestic pig)



*Sylvilagus* spp.  
(Cottontail Rabbit)



*Trichechus* spp.  
(Manatee)



*Tursiops* spp.  
(Bottlenose Dolphin)



*Ursus americanus*  
(American Black Bear)



*Ursus arctos horribilis*  
(Grizzly Bear)



*Ursus maritimus*  
(Polar Bear)



*Vulpes velox* (Swift Fox)



*Vulpes vulpes* (Red Fox)

# Fauna: Molluscs



# Fauna: Other



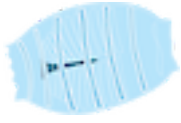
Ascidian



Bryozoan colony



Ctenophore (Comb Jelly)



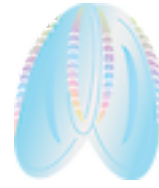
Doliolid (Tunicate)



Fossil trilobite



Limulus polyphemus (Horseshoe Crab)



Mnemiopsis leidyi (Comb Jelly)



Neoesperiopsis rigida (Orange Finger Sponge)



Sea squirt



Sponge 1



Sponge 2



Springtail (Collembola)



Tardigrade

# Fauna: Protozoans



Actinophrys sol  
(Amoeba)



Chaos diffluens  
(Amoeba)



Didinium gargantua  
(Ciliate)



Didinium nasutum  
(Ciliate)



Favella species



Flagellates 1



Flagellates 2



Gyrodinium species



Laboea strobila  
(Ciliate)



Paramecium aurelia  
(Ciliate)



Scuticociliate (Ciliate)



Strombidium (Ciliate)



Tintinnid (Ciliate)



Tintinnopsis species

# Fauna: Reptiles



Alligator mississippiensis (American Alligator)



Caretta caretta (Loggerhead Turtle)



Caretta caretta (Loggerhead Turtle) : hatchling



Chelodina oblonga (Oblong Turtle)



Chelonia mydas (Green Sea Turtle)



Chelydra serpentina (Snapping Turtle)



Chrysemys picta (Painted Turtle)



Crocodylus acutus (American Crocodile)



Crotalus spp. (Rattle Snake)



Crotalus viridis cereberus (Arizona Black Rattlesnake)



Dermochelys coriacea (Leatherback Turtle)



Dermochelys coriacea (Leatherback Turtle) : hatchling



Eretmochelys imbricata (Hawksbill Turtle) : adult



Eretmochelys imbricata (Hawksbill Turtle) hatchling



Eumeces fasciatus (American Five-lined Skink)



Eunectes murinus (Green Anaconda)



Geochelone nigra (Galapagos Giant Tortoise) 1



Geochelone nigra (Galapagos Giant Tortoise) 2



Iguana spp



Lepidochelys kempii (Kemp's Ridley Sea Turtle)



Lepidochelys kempii (Kemp's Ridley Turtle) : hatchling



Lepidochelys olivacea (Olive Ridley Turtle) : adult



Lepidochelys olivacea (Olive Ridley Turtle) hatchling



Malaclemys centrata (Diamondback Terrapin)



Malaclemys terrapin macrospilota (Ornate Diamondback Terrapin)



Natator depressa (Flatback Sea Turtle) : adult



Natator depressa (Flatback Sea Turtle) : hatchling



Nerodia fasciata compressicauda (Mangrove Water Snake)



Python bivittatus (Burmese python)



Turtle 1



Turtle 2



Turtle eggs



Varanus komodoensis (Komodo Dragon)



# Fauna: Worms



Anguillicoloides crassus (Nematode Worm)



Ascaris spp. (Roundworm)



Feather duster worm



Flatworm



Gordian worm



Gordius spp. (Horsehair Worm)



Lumbricus spp. (Earthworm) 1



Lumbricus spp. (Earthworm) 2



Nematode



Palolo virdis (Samoan Palolo Worm)



Polychaete 1



Polychaete 2



Polychaete with white bristles



Pseudoceros dimidiatus (Divided Flatworm)



Segmented worm



Spirobranchus giganteus (Christmas Tree Worms) 1



Spirobranchus giganteus (Christmas Tree Worms) 2



Stylochus ellipticus (Flat Worm)



Worms

Flora: Fungi/Lichen/Moss



Cantharellus cibarius  
(Golden Chanterelle)



Lobaria pulmonaria



Moss 1



Moss 2

# Flora: Grasses/Herbaceous Plants



Acrostichum speciosum (Mangrove Fern)



Acrostichum speciosum (Mangrove Fern) branch



Acrostichum speciosum (Mangrove Fern) leaf



Agropyron pectiniforme (Crested Wheatgrass)



Agrostis spp. (Tickle Grass)



Alliaria petiolata (Garlic Mustard)



Amaranthus pumilus (Seabeach Amaranth)



Ammophila breviligulata (American Beachgrass)



Andropogon gerardii (Big Bluestem)



Bamboo 1



Bamboo 2



Bidens spp. (Bur-marigold)



Bouteloua dactyloides (Buffalo Grass)



Bouteloua gracilis (Blue Grama)



Bromus spp. (Brome Grass)



Calocephalus platycephalus (Billybuttons)



Capparis sandwichiana (Pua Pilo)



Centaurea solstitialis (Yellow Starthistle)



Centaurea spp. (Knapweed)



Chelone glabra (White Turtlehead)



Cirsium arvense (Creeping Thistle)



Cleome multicaulis (Slender Spiderflower)



Cypripedium spp. (Lady's Slipper)



Dactylis glomerata (Orchard Grass)



Danthonia spicata (Poverty Oatgrass)



Distichlis spicata (Coastal Salt Grass)



Echinacea purpurea (Purple Coneflower)



Euphorbia esula (Leafy Spurge)



Festuca spp. (Fescue)



Gaillardia aristata (Blanketflower)



Gaillardia pulchella (Indian Blanket)



Generic fern



Heteropogon contortus (Pili Grass)



Hudsonia tomentosa (Beach Heath)



Lilium longiflorum (Easter Lily)



Lobelia cardinalis (Cardinal Flower)



Lomandra spp. (Lomandra)



Lythrum salicaria (Purple Loosestrife)



Microstegium vimineum (Japanese Stilt Grass) 1



Microstegium vimineum 2 (Japanese Stiltgrass)



Monarda spp. (Bee Balm)



Monarda spp. (Bee Balm) flowers



Muhlenbergia sobolifera (Rock Muhly)



Oryza meridionalis (Wild rice)



Osmunda cinnamomea (Cinnamon Fern)



Oxalis stricta (Common Yellow Woodsorrel)



Panicum virgatum (Switchgrass)



Pascopyrum smithii (Western Wheatgrass)



Pennisetum ciliare (Buffelgrass)



Penstemon barbatus (Golden-beard Penstemon)

# Flora: Grasses/Herbaceous Plants



Peperomia spp. ('ala Wai Nui)



Phlox buckleyi wherry (Sword Leaf Phlox)



Poa pratensis (Kentucky Bluegrass)



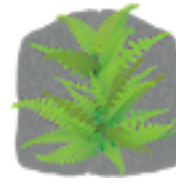
Poaceae (Grass)



Polygonum cespitosum (Oriental Lady's Thumb)



Polypodium virginianum (Rock Cap Fern) 1



Polypodium virginianum (Rock Cap Fern) 2



Polypodium virginianum (Rock Cap Fern) 3



Polystichum acrostichoides (Christmas Fern)



Pseudoroegneria spicata (Bluebunch Wheatgrass)



Sanguisorba canadensis (Canadian Burnet)



Scaevola coriacea (Dwarf Naupaka)



Schizachyrium scoparium (Little Bluestem)



Seed parachute



Sibbaldiopsis tridentata (Three-toothed Cinquefoil)



Sida fallax (Ilima)



Sideoats grama (Bouteloua curtipendula)



Sorghastrum nutans (Indian Grass)



Spartina pectinata (Prairie Cordgrass)



Stipa viridula (Green Needlegrass)



Tridens flavus cupreus (Purpletop)



Triodia spp. (Spinifex)



Typha x glauca (White Cattail)



Verbascum thapsus (Common Mullein)



Wilted plant

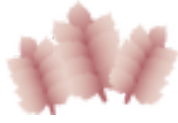
# Flora: Macroalgae



Acanthophora  
spicifera (Spiny  
Seaweed)



Asparagopsis spp



Asparagopsis  
taxiformis (Limu  
Kohu)



Catanella spp



Caulerpa filiformis



Caulerpa racemosa 1



Caulerpa racemosa 2



Caulerpa taxifolia



Chaetomorpha linum



Chaetomorpha spp



Chaetomorpha spp.  
microscopic view



Chlorodesmis spp.  
(Turtle Weed)



Chlorophyta



Chondrus crispus  
(Irish Moss)



Codium fragile (Dead  
Man's Fingers)



Colpomenia spp



Coralline algae



Cryptopleura ramosa



Cystoseira compressa



Dictyota dichotoma



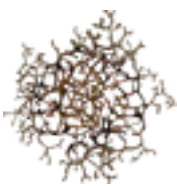
Ecklonia radiata



Enteromorpha  
intestinalis (Gutweed)



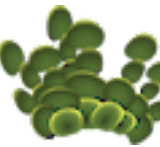
Epilithic algae



Gracilaria spp. 1



Gracilaria spp. 2



Halimeda discoidea



Halimeda spp



Hormosira banksii  
(Neptune's Necklace)



Hypnea musciformis



Laminaria spp



Laurencia obtusa



Laurencia spp



Macrocystis pyrifera  
(Giant Kelp) 1



Macrocystis pyrifera  
(Giant Kelp) 2



Nereocystis pyrifera  
(Bull Kelp)



Padina (Brown Algae)



Padina spp.  
(Peacock's Tail)



Rhodophyta (Red  
Algae)



Saccharina latissima  
(Sugar Kelp)



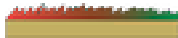
Sarcothalia stiriata



Sargassum spp



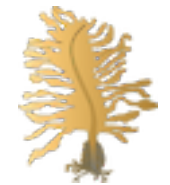
Splachnidium  
rugosum



Turf algae



Ulva spp. (Sea  
Lettuce)



Undaria pinnatifida  
(Wakame)

# Flora: Mangroves



*Aegiceras corniculatum*



*Aegiceras corniculatum* flower



*Aegiceras corniculatum* fruit



*Aegiceras corniculatum* leaf



*Avicennia germinans* (Black Mangrove)



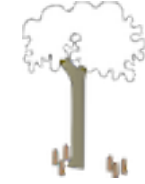
*Avicennia germinans* (Black Mangrove) : dead



*Avicennia germinans* (Black Mangrove) : stress



*Avicennia marina* (Grey Mangrove)



*Avicennia marina* (Grey Mangrove) albino



*Avicennia marina* (Grey Mangrove) flower



*Avicennia marina* (Grey Mangrove) fruit



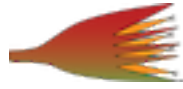
*Avicennia marina* (Grey Mangrove) leaf



*Bruguiera gymnorrhiza* 1



*Bruguiera gymnorrhiza* 2



*Bruguiera gymnorrhiza* flower



*Bruguiera gymnorrhiza* leaf



*Bruguiera gymnorrhiza* mature hypocotyl



*Ceriops australis*



*Ceriops australis* flower



*Ceriops australis* leaf



*Ceriops australis* mature hypocotyl



Dead *Avicennia*



Dead *Rhizophora*



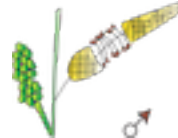
*Excoecaria agallocha*



*Excoecaria agallocha* female flower



*Excoecaria agallocha* leaf



*Excoecaria agallocha* male flower



*Excoecaria agallocha* seed capsule



*Lumnitzera racemosa*



*Lumnitzera racemosa* flower



*Lumnitzera racemosa* fruit 1



*Lumnitzera racemosa* fruit 2



*Lumnitzera racemosa* leaf



Mangrove direct damage effects



Mangrove ecotone shift effects



Mangrove gain effects



Mangrove growth



Mangrove insect damage effects



Mangrove loss effects



Mangrove nutrient excess effects



Mangrove oil spill effects



Mangrove reclamation effects



Mangrove restricted tidal exchange effects



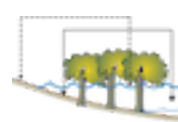
Mangrove species specific effects



Mangrove storm damage effects



Mangrove wrack accumulation effects



Mangrove zonal shift effects



*Rhizophora mangle* (Red Mangrove)



*Rhizophora mangle* (Red Mangrove) seedling



*Rhizophora mucronata*

# Flora: Mangroves



Rhizophora stylosa



Rhizophora stylosa  
flower



Rhizophora stylosa  
fruit



Rhizophora stylosa  
leaf



Rhizophora stylosa  
propagule



Sonneratia alba  
(Mangrove Apple)

# Flora: Marsh/Wetlands



Ceratopteris spp



Cladium procerum  
(Leafy Twig-sedge)



Eichhornia crassipes  
(Water Hyacinth)



Eleocharis dulcis  
(Chinese Water Chestnut)



Eleocharis spp. (Spike Rush)



Fimbristylis dichotoma  
(Tall Fringe-rush)



Hymenachne amplexicaulis (Olive hymenachne)



Impatiens capensis  
(Spotted Jewelweed)



Kosteletzkya virginica  
(Seashore Mallow) 1



Kosteletzkya virginica  
(Seashore Mallow) 2



Lepironia articulata  
(Blue Rush)



Miscanthus sinensis  
(Chinese Silvergrass)



Nelumbo lutea  
(American Water Lotus) : bud



Nelumbo lutea  
(American Water Lotus) : flower 1



Nelumbo lutea  
(American Water Lotus) : flower 2



Nelumbo lutea  
(American Water Lotus) : pad



Nelumbo lutea  
(American Water Lotus) : seed pod



Nymphaea odorata  
(White Water Lily) : flower



Nymphaea odorata  
(White Water Lily) : pad



Oryza spp. (Rice)



Peltandra virginica  
(Green Arrow Alum)



Phragmites australis  
(Common Reed)



Phragmites australis  
(Common Reed) singular



Reeds



Sagittaria spp.  
(Arrowhead)



Salvinia molesta  
(Giant Salvinia)



Sarcocornia spp.  
(Samphire)



Scirpus americanus  
(Bulrush)



Scirpus spp. (Bulrush)



Spartina alterniflora  
(Smooth Cordgrass)



Spartina alterniflora  
(Smooth Cordgrass) singular



Spartina patens  
(Saltmeadow Cordgrass)



Spartina spp. (Salt Marsh Grass)



Sporobolus spp.  
(Dropseed)



Suaeda australis  
(Austral Seablite)



Tecticornia flabelliformis (Bead Samphire)



Tecticornia spp.  
(Samphire)



Typha orientalis  
(Bulrush)



Typha spp. (Cattail)



Wetland



Zizania spp. (Wild Rice)



# Flora: Microalgae



Akashiwo sanguinea  
(Dinoflagellate)



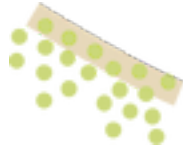
Amphidinium crassum  
(Dinoflagellate)



Amphidinium operculatum  
(Dinoflagellate)



Asterionellopsis glacialis  
(Diatom)



Benthic microalgae 1



Benthic microalgae 2



Centric diatom



Ceratium furca  
(Dinoflagellate)



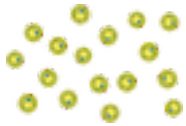
Ceratium spp.  
(Dinoflagellate)



Chaetoceros affinis  
(Diatom)



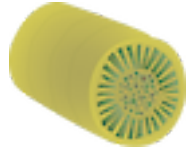
Chattonella spp



Chlamydomonas



Coccolithophore



Cyclotella



Cyclotella: single



Diatoms



Dinoflagellate 1



Dinoflagellate 2



Dinoflagellate 3



Dinoflagellate cyst 1



Dinoflagellate cyst 2



Dinoflagellate cyst 3



Dinoflagellates



Dinophysis acuminata  
(Dinoflagellate)



Fibrocapsa japonica



Gymnodinium catenatum



Karlodinium micrum



Mixed Phytoplankton Community Coloured



Pennate Diatom 2



Pennate diatom 1



Pfiesteria piscicida  
(Dinoflagellate)



Pfiesteria shumwayae  
(Dinoflagellate)



Phytoplankton bloom



Prorocentrum micans  
(Dinoflagellate)



Prorocentrum minimum  
(Dinoflagellate)



Pseudo-nitzschia australis  
(Diatom)



Pyrodinium bahamense



Thalassiosira nordenskioldii  
(Diatom)



Thalassiothrix nitzschioides  
(Diatom)



flagellated  
Dinoflagellate

# Flora: Seagrass/SAV



Amphibolis antarctica



Amphibolis griffithii



Amphibolis with epiphytes



Callitriche spp. (Water Starwort)



Ceratophyllum demersum (Coontail)



Cymodocea nodosa



Cymodocea rotundata



Cymodocea rotundata seeds



Cymodocea serrulata 1



Cymodocea serrulata 2



Cymodocea serrulata seeds



Deep water seagrass



Elodea canadensis (Canadian Waterweed)



Enhalus acoroides



Enhalus acoroides seeds



Halodule uninervis



Halodule uninervis seeds



Halodule wrightii (Shoalweed)



Halophila australis



Halophila beccari



Halophila beccari seeds



Halophila bulbosa



Halophila capricorni



Halophila decipiens (Caribbean Seagrass) 1



Halophila decipiens (Caribbean Seagrass) 2



Halophila decipiens (Caribbean Seagrass) seeds



Halophila engelmannii (Star Grass)



Halophila hawaiiiana



Halophila johnsonii (Johnson's Seagrass) 1



Halophila johnsonii (Johnson's Seagrass) 2



Halophila linearis



Halophila minor 1



Halophila minor 2



Halophila ovalis



Halophila ovalis seeds



Halophila ovata



Halophila seed bank



Halophila spinulosa



Halophila spinulosa seeds



Halophila stipulacea



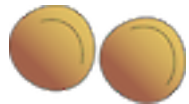
Halophila stipulacea seeds



Halophila tricostata 1



Halophila tricostata 2



Halophila tricostata seeds



Heteranthera dubia (Water Stargrass)



Heterozostera tasmanica



Hydrilla verticillata (Waterthyme) 1



Hydrilla verticillata (Waterthyme) 2



Marsilea spp. (Water Clover)



Myriophyllum spicatum (Eurasian Watermilfoil)

# Flora: Seagrass/SAV



*Najas guadalupensis*  
(Common Water Nymph)



No propagule colonisation



*Nuphar* spp. (Yellow Waterlily)



*Phyllospadix* spp.  
(Surfgrass)



*Posidonia angustifolia*



*Posidonia australis*



*Posidonia coriacea*



*Posidonia oceanica*  
growing on mat



*Posidonia oceanica*  
seedling 1



*Posidonia oceanica*  
seedling 2



*Posidonia sinuosa*



*Posidonia* with epiphytes



*Potamogeton crispus*  
(Curly-leaf Pondweed)



*Potamogeton perfoliatus*  
(Perfoliate Pondweed)



*Ranunculus aquatilis*  
(Common Water-crowfoot)



*Ruppia maritima* fruits



*Ruppia maritima*  
reproductive shoots



*Ruppia maritima*  
vegetative shoots



*Ruppia megacarpa* 1



*Ruppia megacarpa* 2



*Ruppia megacarpa*  
flower



*Ruppia megacarpa*  
with flowers



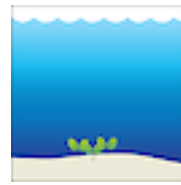
*Ruppia* seed bank



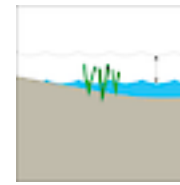
Seagrass



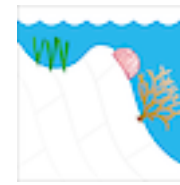
Seagrass habitat:  
coastal



Seagrass habitat:  
deep water



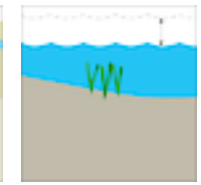
Seagrass habitat:  
intertidal



Seagrass habitat: reef



Seagrass habitat:  
rivers



Seagrass habitat:  
subtidal



Seagrass leaf recycling



Seagrass leaf with *Cladophora*



Seagrass leaf with encrusting epiphytes



Seagrass leaf with epiphytes



Seagrass loss



Seagrass loss and recovery



Seagrass meadow



Seagrass with rhizome



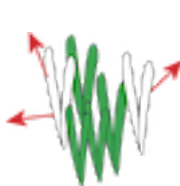
Seagrass: dead mat



Seagrass: detritus



Seagrass: grazer



Seagrass: growth



Seagrass: potential habitat



Seagrass: propagule colonisation



Seagrass: shallow water



*Stuckenia pectinata*  
(Sago Pondweed)



*Syringodium filiforme*



*Syringodium isoetifolium* 1



*Syringodium isoetifolium* 2



*Syringodium isoetifolium* seeds

# Flora: Seagrass/SAV



Thalassia hemprichii 1



Thalassia hemprichii 2



Thalassia hemprichii seeds



Thalassia testudinum (Turtlegrass)



Thalassodendron ciliatum 1



Thalassodendron ciliatum 2



Thalassodendron pachyrhizon



Trapa natans (Water Chestnut)



Vallisneria americana (Wild Celery)



Water lily 1



Water lily 2



Zannichellia palustris (Horned Pondweed)



Zostera asiatica



Zostera caespitosa



Zostera capensis



Zostera capensis seeds



Zostera capricornii



Zostera capricornii seeds



Zostera noltii

# Flora: Trees/Shrubs/Vines



Acacia koa (Koa tree)



Acacia spp. (Acacia)



Acer pennsylvanicum (Striped Maple)



Acer platanoides (Norway Maple)



Acer pseudoplatanus (Sycamore Maple)



Acer rubrum (Red Maple) 1



Acer rubrum (Red Maple) 2



Acer rubrum (Red Maple) leaf



Agave spp. (Agave)



Agave spp. (Agave) with stalk



American Beech (Fagus grandifolia) with gray bark



American Sycamore (Platanus occidentalis) alternate



American Sycamore (Platanus occidentalis) with overhanging branch



Arctostaphylos spp. (Manzanita)



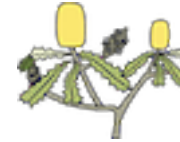
Arecaceae (Palm Tree) 1



Arecaceae (Palm Tree) 2



Arecaceae (Palm tree) 3



Banksia spp. (Banksia)



Banksia spp. (Banksia) with proteid roots



Banksia spp. (Banksia) with resprouting lignotuber



Batis maritima (Pickleweed)



Berberis thunbergii (Japanese Barberry)



Betula spp. (Birch)



Calliandra spp. (Fairy Duster)



Carnegiea gigantea (Saguaro Cactus)



Carya glabra (Pignut Hickory)



Carya ovata (Shagbark Hickory)



Carya ovata (Shagbark Hickory) fruit



Carya ovata (Shagbark Hickory) leaves



Casuarina spp. (Casuarina)



Cercis canadensis (Eastern Redbud): flowering



Cercis canadensis (Eastern Redbud): foliage



Chenopodium oahuense (Aweoweo)



Chuquiraga avellanadae (Quilembay)



Chuquiraga hystrix



Clethra alnifolia (Coastal Sweetpepperbush)



Cocos nucifera (Coconut Palm) 1



Cocos nucifera (Coconut Palm) 2



Corymbia spp. (Ghost Gum)



Damaged tree



Dead tree 1



Dead tree 2



Dead tree 3



Dead tree 4



Deer overbrowse: shrub



Deer overbrowse: tree



Elaeagnus angustifolia (Russian Olive)



Elaeagnus angustifolia (Russian Olive) leaves



Erythrina sandwicensis (Wiliwili)



Erythrina spp. (Coral Tree)

# Flora: Trees/Shrubs/Vines



*Eucalyptus camaldulensis* (River Red Gum)



*Eucalyptus* spp. (Eucalypt) 1



*Eucalyptus* spp. (Eucalypt) 2



*Eucalyptus* spp. (Eucalypt) 3



*Fagus grandifolia* (American Beech)



*Fagus grandifolia* (American Beech) leaves



*Ferocactus wislizeni* (Fishhook Barrel Cactus)



*Fraxinus americana* (White Ash)



*Fraxinus profunda* (Pumpkin ash)



*Gaylussacia frondosa* (Dangleberry)



Generic orchid



Generic shrub: temperate



Generic shrub: tropical



Generic tree 1



Generic tree: fall



Generic tree: rainforest 1



Generic tree: rainforest 2



Generic tree: rainforest 3



Generic tree: spring



Generic tree: summer



Generic tree: winter



*Hedera helix* (English Ivy)



*Hedera helix* (English Ivy) flower



*Hedera helix* (English Ivy) fruit



*Hedera helix* (English Ivy) leaf



*Heteromeles arbutifolia* (Christmas Berry)



*Hydrangea arborescens* (Smooth Hydrangea)



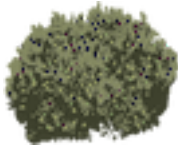
*Ilex verticillata* (winterberry)



*Intsia bijuga* (Ifilele)



*Ipomoea pes-caprae* (Beach Morning Glory)



*Juniperus monosperma* (One-seed Juniper)



*Juniperus virginiana* (Eastern Red Cedar)



*Juniperus virginiana* (Eastern Red Cedar) leaves



*Kalmia latifolia* (Mountain Laurel)



*Kalmia latifolia* (Mountain Laurel) flowers



*Lantana camara* (West Indian Lantana)



*Larrea tridentata* (Creosote Bush)



*Leucaena leucocephala* (White Leadtree)



*Leucopogon* spp. (Beard Heath)



*Lindera benzoin* (Spicebush)



*Liquidambar styraciflua* (Sweetgum)



*Liriodendron tulipifera* (American Tulip Tree)



*Lonicera maackii* (Amur honeysuckle)



*Magnolia virginiana* (Sweetbay Magnolia)



*Melaleuca cuticularis* (Saltwater Paperbark)



*Melaleuca raphiophylla* (Swamp Paperbark)



*Melaleuca* spp. (Ti Tree)



*Melaleuca* spp. (Ti Tree) leaves



*Merremia peltata*



*Miconia calvescens* (Bush Currant)

# Flora: Trees/Shrubs/Vines



Morinda Citrifolia  
(Indian Mulberry)



Myrica cerifera (wax  
myrtle)



Nyssa biflora (Swamp  
Black Gum)



Nyssa sylvatica  
(tupelo or black gum)



Pandanus spp



Parthenocissus  
quinquefolia (Virginia  
creeper) 2



Picea glauca (White  
Spruce)



Pinus palustris  
(Longleaf Pine)



Pinus ponderosa  
(Ponderosa pine)



Pinus rigidus (Pitch  
Pine)



Pinus spp. (Pine)



Pinus strobus  
(Eastern White Pine)



Pinus taeda (Loblolly  
Pine)



Pinus virginiana  
(Virginia Pine)



Pisonia spp. (Pisonia)



Populus balsamifera  
(Balsam poplar)



Populus deltoides  
(Eastern Cottonwood)



Populus tremula  
(Aspen)



Pritchardia minor  
(Loulou Palm)



Quercus alba (White  
Oak)



Quercus alba (White  
Oak) leaves



Quercus bicolor  
(Swamp White Oak)



Quercus falcata  
(Southern Red Oak)



Quercus macrocarpa  
(Bur Oak)



Quercus montana  
(Chestnut Oak)



Quercus montana  
(Chestnut Oak) leaves



Quercus montana  
(Chestnut Oak) with  
roots



Quercus  
muehlenbergii  
(Chinkapin Oak)



Quercus palustris  
(Swamp Spanish  
Oak)



Quercus rubra  
(Northern Red Oak)



Quercus spp. (Oak)  
seedling



Rhus radicans  
(Poison Ivy)



Rhus radicans  
(Poison Ivy) leaf



River Birch (Betula  
nigra)



Robinia pseudoacacia  
(Black Locust)



Rosa multiflora  
(Multiflora Rose)



Salix x sepulcralis  
(Weeping Willow)



Santalum  
freycinetianum  
(Freycinet  
Sandalwood)



Scarlet Oak (Quercus  
coccinea)



Shepherdia argentea  
(Silver Buffaloberry)



Shortleaf pine (Pinus  
echinata)



Silver Maple (Acer  
Saccharinum)



Spathodea  
campanulata (African  
Tulip)



Sweet Birch (Betula  
lenta)



Taxodium distichum  
(Bald Cypress)



Taxodium distichum  
(Bald Cypress) with  
knees



Tilia americana  
(Basswood)



Tsuga canadensis  
(Eastern Hemlock)



Tsuga canadensis  
(Eastern Hemlock)  
branch



Tsuga canadensis  
(Eastern Hemlock)  
with roots

## Flora: Trees/Shrubs/Vines



*Vaccinium  
corymbosum*  
(Highbush blueberry)



*Viburnum dentatum*  
(Arrowwood  
Viburnum)



*Xanthorrhoea* spp.  
(Grass Tree)



*Yucca brevifolia*  
(Joshua Tree)



*Yucca* spp. (Yucca)



# Human: Agriculture



Agricultural fertilizer icon

Agricultural mower



Alfalfa



Alfalfa with roots



Animal nutrition



Apple



Banana



Banana 2



Banana bunch



Banana tree 1



Banana tree with fruit



Barn



Barn 2



Beaver slide hay bailer



Beef/dairy farming 2



Center pivot irrigation



Chicken house



Coconut palm tree



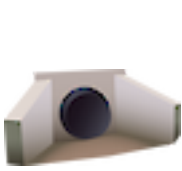
Coffea sp. (Coffee Plant)



Corrugated culvert pipe



Cotton boll



Culvert



Dairy: milk



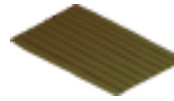
Farmer sun hat



Farmer with corn



Fertilizer



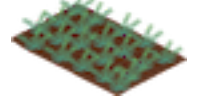
Field: fallow



Field: harvesting



Field: ploughed



Field: winter crop



Flower pot



Food



Grain silos 1



Grain silos 2



Grape vine



Greenhouse



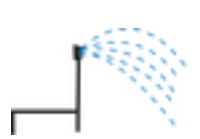
Groundwater extraction and compression



Hay bales



Helicopter sprayer



Irrigation



Kiwi fruit



Kiwi fruit 2



Livestock Feed Trough



Livestock Water Trough



Machine mower



Maize/corn cob 1



Maize/corn cob 2



Maize/corn crop



Maize/corn stalk



Manure composting bunker

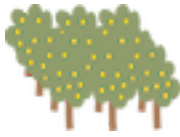
# Human: Agriculture



Manure export



Orange



Orchard



Papaya



Papaya tree



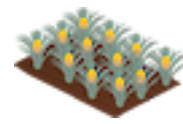
Pear



Pine plantation



Pineapple



Pineapple plantation



Rice 1



Rice 2



Seedling



Slaughterhouse/abattoir



Soybean oil



Soybeans



Sugarcane



Sugarcane plantation



Sweet potato plantation



Sweet potato plot



Taro



Taro 2



Taro plantation



Taro plot



Tractor 1



Tractor 2



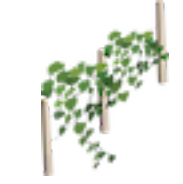
Tractor 3



Tractor 4



Tractor 5



Vine crop



Wheat



Wheat kernels



Wheat sheath



Winter crop

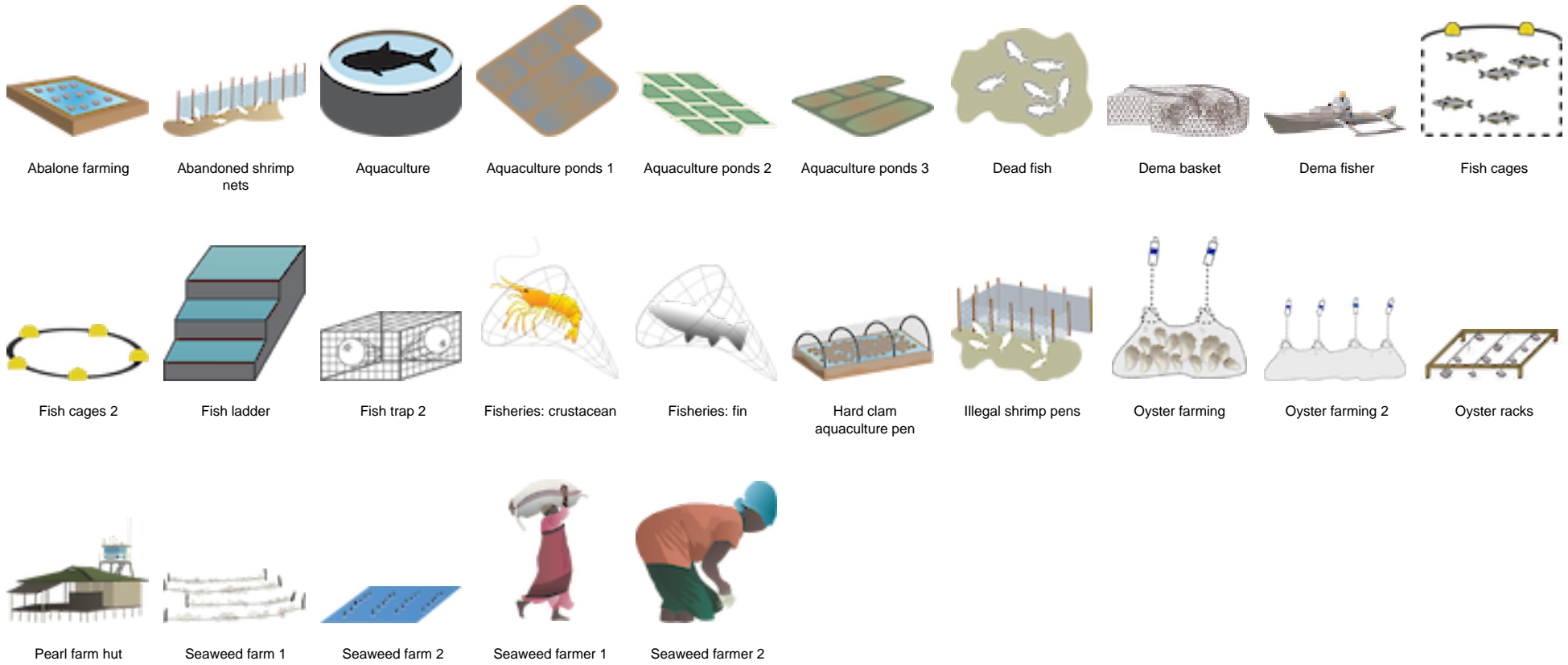


Wood-split fencing 01



Wood-split fencing 02

# Human: Aquaculture



# Human: Climate Change



Climate change:  
above average  
temperatures



Climate change:  
below average  
temperatures



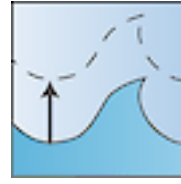
Climate change:  
drought



Climate change:  
ghost forest



Climate change: heat  
wave



Climate change: sea-  
level rise



Climate change:  
wildfire



Flooding



Increased CO2  
emissions map

# Human: Culture/Archaeology



American cowboy



Archaeological site



Archaeologist: female



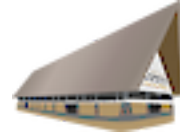
Archaeologist: male



Artifact: axe blade



Artifact: beads



Bai (Palauan meeting place)



Brigantine



Cannon



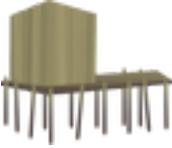
Cave explorer



Chamorro canoe



Coastal toilet 1



Coastal toilet 2



Cultural Odisha graphics



Currency: dollar sign



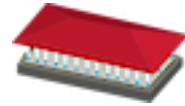
DC Capitol building



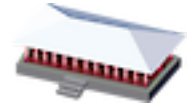
DC Washington Monument



Dreamcatcher (Native American Ojibwe)



Fale 1 (Samoa)



Fale 2 (Samoa)



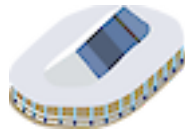
Fale 3 (Samoa)



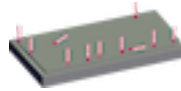
Fale 4 (Samoa)



Fale 5 (Samoa)



Fale 6 (Samoa)



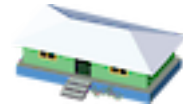
Fale: Tsunami damaged (Samoa)



Fale: enclosed 1 (Samoa)



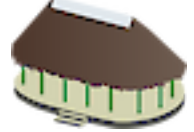
Fale: enclosed 2 (Samoa)



Fale: enclosed 3 (Samoa)



Fale: enclosed 4 (Samoa)



Fale: traditional (Samoa)



Family



Feather



Fishing village (Indonesia)



Flag: Australia



Flag: Australia Queensland



Flag: USA Hawaii



Flag: USA Hawaii Kanaka Maoli



Flag: USA Maryland



Flag: United Kingdom



Flag: United States of America



Footprints



Fort Union



Gleaning basket



Gullah sweetgrass basket



Halau (Hawaiian long house)



Hawaiian Royalty Headdress



Hawaiian double-hulled canoe (wa'kaulua)



Heiau (Hawaiian temple)



Hibiscus Flower



Ki'i (Hawaiian war god)

# Human: Culture/Archaeology



Lawn Mower



Maryland State House



Mathematics: Pi



Metrosideros Polymorpha (Hi'a Lehua)



Monument 1



Monument 2



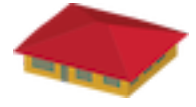
Music: eighth notes 1



Music: eighth notes 2



Outrigger canoe 4



Palagi house (Samoa)



Palau Storyboard: 1



Palau Storyboard: 2



Palau Storyboard: 3



Palau Storyboard: 4



Palau Storyboard: 5



Petroglyph: (Hawaiian Honu)



Pyramid 1



Pyramid 2



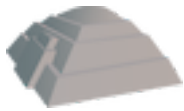
Religion: Christian cross



Samoa canoe



Shipwreck



Step pyramid 1



Step pyramid 2



Stilt house (Indonesia) 1



Stilt house (Indonesia) 2



Stilt house (West Papua)



Storyteller



Sydney Opera House



Tipi/Teepee (Plains Indians)



Totem pole (First Nations)



Trading keelboat

# Human: Development/Infrastructure



Amphitheater



Amphitheater 2



Bridge: Sydney Harbour



Bridge: arched



Bridge: suspension



Caribbean house



Cemetery



Civil Engineering: Cross vane weir



Civil Engineering: Flow deflector (J-hook Vane)



Civil Engineering: bulkhead



Civil Engineering: mosquito ditches



Civil Engineering: riprap



Communications: cell phone tower 1



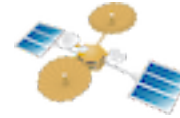
Communications: cell phone tower 2



Communications: radio tower



Communications: satellite 1



Communications: satellite 2



Communications: satellite 3



Communications: satellite 4



Communications: satellite dish



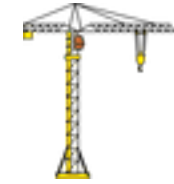
Communications: satellite dish 2



Concrete bollard



Construction: bulldozer



Construction: crane



Construction: earthworks



Construction: excavator



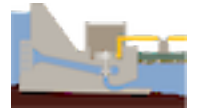
Construction: house-frame



Energy: high voltage power stanchions



Energy: hydro power station



Energy: hydroelectric dam



Energy: hydroelectric plant



Energy: hydroelectric turbine



Energy: nuclear power station



Energy: nuclear reactor



Energy: power line



Energy: power station



Energy: renewable energy icon



Energy: solar panel



Energy: solar panels 2



Energy: solar panels 3



Energy: wind turbine 1



Energy: wind turbine 2



Factory



Favela in Brazil



Freight: port crane 1



Jetty



Jetty 2



Jetty 3



Lighthouse 1



Lighthouse 2

# Human: Development/Infrastructure



Lighthouse 3



Marina 1

Marina 2



Mooring buoy



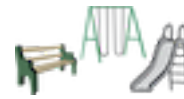
Park: gazebo



Park: outhouse



Park: park bench



Park: playground



Park: raingarden



Park: sliding board



Park: swing set



Prison



Prison Tower



Small village (India)



Storm drain 2



Suburban Cape Cod Home on Stilts



Suburban: Cape Cod home with porch



Suburban: Cape Cod house



Suburban: McMansion



Suburban: Queenslander



Suburban: canal estate 1



Suburban: canal estate 2



Suburban: house 1



Suburban: house 10



Suburban: house 11



Suburban: house 2



Suburban: house 3



Suburban: house 4



Suburban: house 5



Suburban: house 6



Suburban: house 7



Suburban: house 8



Suburban: house 9



Suburban: house with verandah



Suburban: rancher 1



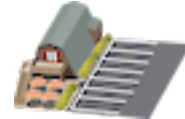
Suburban: rancher 2



Suburban: west coast house 1



Suburban: west coast house 2



Urban cafe



Urban sprawl



Urban: Spanish-style building



Urban: Spanish-style building 2



Urban: Spanish-style building 3



Urban: Three-story building



Urban: apartment building 1



Urban: apartment building 2



Urban: apartment building 3



Urban: apartment building 4



Urban: church 1



Urban: church 2



# Human: Development/Infrastructure



Urban: church 3



Urban: church 4



Urban: city 1



Urban: city 2



Urban: city building 01



Urban: city building 02



Urban: city building 03



Urban: city building 04



Urban: city building 05



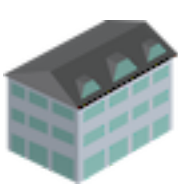
Urban: city building 06



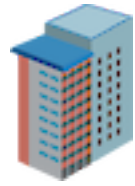
Urban: city building 07



Urban: city building 08



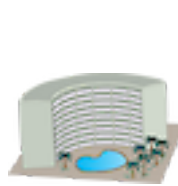
Urban: city building 09



Urban: city building 10



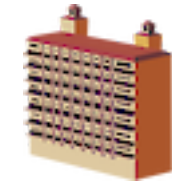
Urban: city building 11



Urban: condo



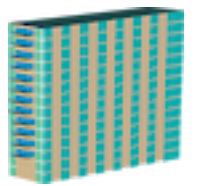
Urban: condo 2



Urban: condo 3



Urban: condo 4



Urban: condo 5



Urban: downtown (Fiji)



Urban: green building



Urban: green roof 1



Urban: green roof 2



Urban: green roof 3



Urban: high-rise building



Urban: parking garage



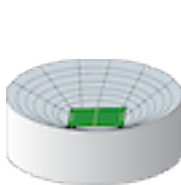
Urban: parking lot



Urban: public toilet



Urban: row houses



Urban: stadium



Urban: townhouse (Asian)



Urban: warehouse



Waste management: compost bin



Waste management: landfill



Water: Biodigester



Water: dam 1



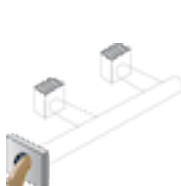
Water: dam 2



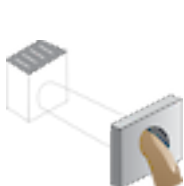
Water: dam 3



Water: desalination plant



Water: drainage 1



Water: drainage 2



Water: drinking water treatment plant 1



Water: municipal well



Water: septic system



Water: septic system 1



Water: septic system 2



Water: septic truck icon



Water: sewage pumping station

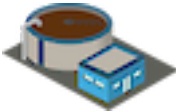


Water: sewage treatment plant 1

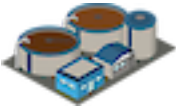
# Human: Development/Infrastructure



Water: sewage treatment plant 2



Water: sewage treatment plant: primary



Water: sewage treatment plant: tertiary



Water: water pipe 1



Water: water pipe 2



Water: water tower



Weir



Well

# Human: Education



Book



Bookcase



Computer map icon



Data display icon



Education boat  
(Indonesia)



Graduates icon



Knowledge icon



Library icon



New ideas icon



Pencil



Samoan school



Teacher



Teaching icon



University



University cap

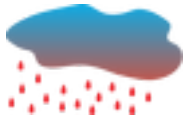


Webinar icon



Writer perusing work

# Human: Environmental Degradation



Acid rain



Air quality: high



Air quality: low



Air quality: medium



Landfill



Lawn Fertilizer  
Spreader



Noise



Oil spill



Old bottle



Old tires



Overfishing



Plastic bag 1



Plastic bag 2



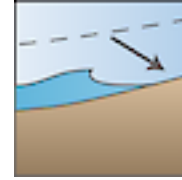
Plastic bottle 1



Plastic bottle 2



Plastic bottle 3



Receding shoreline



Roadside trash



Rusty drum



Skull and crossbones



Soda can



Vessel strike of  
marine mammal

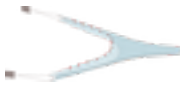
# Human: Fishing



Bamboo hand spear



Bamboo speargun



Benthic Otter Trawl



Benthic Trawler



Benthic Trawling



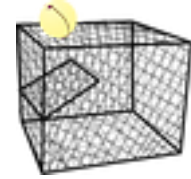
Chicken necking



Clammer



Crab boat



Crab pot



Crab scraping



Cyanide fishing boat



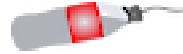
Cyanide fishing:  
squeeze bottle



Double-hulled fishing  
boat (Samoa)



Dynamite fishing



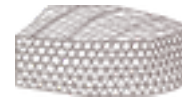
Dynamite fishing:  
Molotov cocktail



Dynamite fishing:  
explosion



Fish aggregating  
device



Fish trap 1



Fish trap 2



Fishery



Fly fishing lure



Ghost net



Indonesian zone  
marker



Liftback net



Line Fisher; Indonesia



Longline tuna boat



Mothership



Net fisher



Net fishers



Net fishers (India)



Net fishers with six  
crew members



Outrigger canoe  
(Samoa)



Outrigger canoe 1



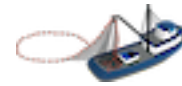
Outrigger canoe 2



Outrigger canoe 3



Prawn trawler



Purse Seine



Reef fishing hut



Seasonal fishing  
closure sign



Seining



Shellfish Fishery



Shrimp Fishery



Skipjack



Trap fishers



Trawler boat



Trawler boat 2



Trotlining



Waterman

# Human: Forestry



Forestry worker



Logging



Logging 2



Logging 3



Logging 4



Logging truck

# Human: Management/Restoration



Anchor damage management



Archaeological site management



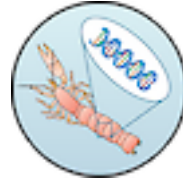
Avalanche control



Backcountry management



Biodiversity Hot Spot



Bioindicators



Blue crab management



Coastal zone management



Defense force lands



Degraded water quality



Economic indicators



El Nino Southern Oscillation management



Exotic plant management: crew member



Fertilizer ban icon



Fire management



First nations management (Canada)



Fisheries management



Fishing moratorium



Forestry management



Government 1



Government 2



Habitat management



Human access management



Immigration control



Indigenous management (Australia)



Indigenous management (Kuna, Panama)



Indigenous management (New Zealand)



Indigenous management (USA)



International obligations and treaties



Introduced species management



Kyoto protocol



Lawn fertilizer icon



Legislative initiative icon



Linking science and management



Marine Access Limited



Marine protected area



Marsh restoration



Money symbol



Next steps



No take zone



Oyster restoration



People icon



Poorly understood systems



Port authorities



Rain barrel icon



Recycling bins



Regional level initiatives



Restoration: boy with shovel



Restoration: girl planting tree



Restoration: man planting tree

# Human: Management/Restoration



Restoration: planting trees



Saltwater intrusion



Seagrass restoration



State level planning initiatives



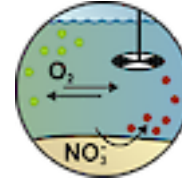
Toolbox



Volunteer



Water quality



Water quality management



Water resource management



Watershed management



Yard waste icon



# Human: Manufacturing/Refining



Asphalt plant



Industrial building 1



Industrial building 2



Industrial building 3



Industrial building 4



Industrial park



Industry



Industry 2



Manufacturing factory building



Manufacturing factory building 2



Manufacturing factory building 3



Manufacturing factory building 4



Manufacturing paper mill



Petroleum industry: oil refinery

# Human: Mapping/Navigation



Buoy: midchannel, safe



Buoy: port, lighted



Buoy: starboard, lighted



Can buoy: port



Can buoy: starboard



Canadian autoroute sign



Cardinal marker: east



Cardinal marker: north



Cardinal marker: south



Cardinal marker: west



Channel buoy: midchannel, light



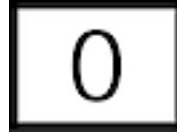
Channel buoy: midchannel, no light



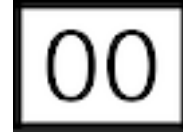
Channel buoy: port



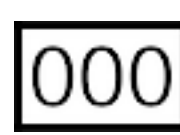
Channel buoy: starboard



County highway sign



County highway sign 2



County highway sign 3



Divers flag, USA



Divers flag, alfa flag international



Interstate 17 sign



Interstate highway sign



Interstate highway sign 2



Interstate highway sign 3



Interstate highway sign 4



Lateral marker: USA, port



Lateral marker: USA, starboard



Lateral marker: international port



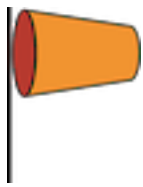
Lateral marker: international, starboard



Lifeguard flag: Australia, safe to swim between flags



Lifeguard flag: UK, danger no swimming



Lifeguard flag: UK, no inflatables



Lifeguard flag: UK, surf craft only



Lifeguard flag: UK, swim in designated areas



North Arrow 1



North Arrow 2



North arrow 3



Nun buoy: port



Nun buoy: starboard



Regulatory marker: danger



Regulatory marker: keep out



Regulatory marker: speed limit



Scale bar



Scale bar: kilometers vs miles



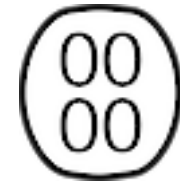
State highway sign



State highway sign 2



State highway sign 3



State highway sign 4



Storm warning: gale



Storm warning: hurricane



Storm warning: small craft advisory

# Human: Mapping/Navigation



Storm warning: storm whole gale



Trans-Canada highway sign



U.S. highway sign



U.S. highway sign 2



U.S. highway sign 3



U.S. highway sign 4



U.S. highway sign 5

# Human: Mining



Arctic Drilling



Blowout Preventer



Deep sea mining: bulk cutter



Deep sea mining: seafloor mining tool



Deep sea mining: support vessel



Dredge



Dredge 2



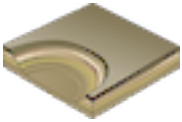
Dredge 3



Mine drainage



Mining: hammer and chisel



Mining: open cut mine



Oil Derrick



Oil Spill Containment



Petroleum industry: mining truck



Petroleum industry: oil rig



Petroleum industry: oil rig platform 1



Petroleum industry: oil rig platform 2



Petroleum industry: oil tanker



Quarry mining



Saltworks

# Human: Other



Alarm clock



Anchor



Beach chair



Boots



Bricks



Bucket



Camping lantern



Chisel



Climbing/caving helmet with headlamp



Clipboard



Coffee cup



Cooler 1



Cooler 2



Dishwasher



Drinking water



Drip torch



Firewood



Flag



Garden hose



Hand pruners



Hourglass



Internet



Ladder



Light bulb



Magnifying glass



Magnifying glass



Mason jar



Medical caduceus



Mooring



Ointment



Padlock



Pet waste station



Playing cards



Portable generator



Puzzle



Reduce Reuse Recycle



Restroom



Rifle



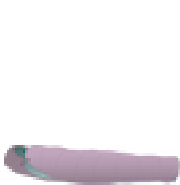
Rope coil



Scissors



Scroll



Sleeping bag



Spade



Spray bottle



Tape measure



Weighing scales 1



Weighing scales 2



Wooden sign



Work glove

# Human: Recreation



ATV with rider



Beach umbrella



Bird watcher



Birder



Boston Whaler motorboat



Camper



Campfire



Canoeing



Child swimmer



Dive boat



Ecotourism



Fishing



Fishing boat



Fishing hook



Golf course



Golfer



Hiker: overnight



Hot air balloon 1



Hot air balloon 2



Houseboat



Hunter



Jet ski



Jet skiing



Kayaking



Kayaking: recreational



Lead Mule



Little blue dune buggy



Man tubing



Mountain biking



Picnic table



Powerboat



Race track or horse breeding facility



Racing speedboat



Rock climbing



Rowing



Sailboat 1



Sailboat 2



Sailboat 3



Scuba diver



Scuba diver 2



Scuba diver 3



Shore fishing



Skiing



Snorkelling: child



Snorkelling: woman



Snowman



Snowman: melted



Snowmobile with rider



Sunbathing



Surf Fishing

Human: Recreation



Surfing



Swimmer



Tent



Tourism



Trail biking



Tubing



Water skiing



Wind surfing



Young birder

# Human: Science/Research



Anemometer



Aquarium airstone



Aquarium tank



Aquarium tank from top



Aquarium tank from top 2



Aquarium tank with mesh and airstone



Artificial light



Auto analyzer



Autosampler



Autotrophic system experiment



Beaker



Bioassay bag



Box corer



Buoy



Buoy 2



Canopy crane



Chemostat



Chesapeake Bay Observing System (CBOS) buoy



Clipboard



Clipboard icon



Compound microscope



Computer



Computer 2



Computer 3



Container



Continuous plankton recorder



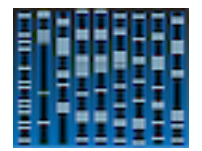
Core logger



Current meter



Current meter with flag



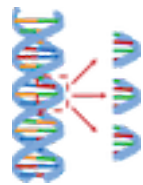
DNA sequencing gel



DNA strand 1



DNA: strand 2



DNA; amplification of sequence



Deepwater research station



Drying oven



Electron microscope



Erlenmeyer flask



Field researcher



Field station



Filtering sample



Filtration: manifold



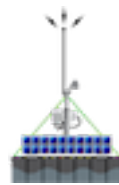
Filtration; pigment analyses



Filtration; total suspended solids analyses



Floating grow-out units



Floating solar-powered transmitter



Fluorometer



Flux tower



Geological hammer



Image sensor



Incubation chamber



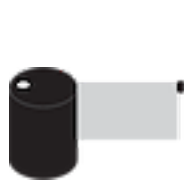
# Human: Science/Research



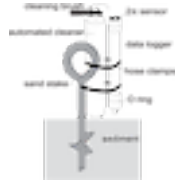
Jar



Javelin sensor



Licor profiler unispex spectrometer



Light logger diagram



Light meter



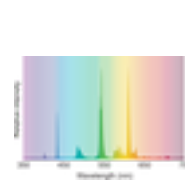
Light: fluorescent bulb



Light: fluorescent bulb 2



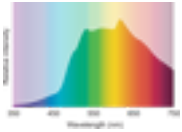
Light: fluorescent bulb 3



Light: fluorescent spectra



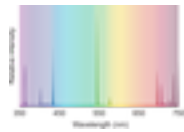
Light: incandescent bulb



Light: incandescent spectra



Light: mercury bulb



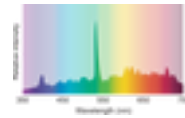
Light: mercury spectra



Light: mercury vapor bulb



Light: metal halide bulb



Light: metal halide spectra



Macroalgal incubation setup



Macroalgal incubation setup 2



Mass spectrometer



Mass spectrometer 2



Measuring cup: full



Measuring cup: half



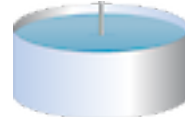
Measuring cup: low



Measuring secchi depth



Measuring secchi depth 2



Mesocosm 1



Mesocosm 1 cutaway



Mesocosm 2



Mesocosm 2 cutaway



Mesocosm 3



Mesocosm 3 cutaway



Mesocosm 4



Mesocosm 4 cutaway



Meteorological tower



Microcapillary tube



Microscope



Monitoring: beach topography



Monitoring: biologist bird-watcher



Monitoring: deer population count



Monitoring: salt marsh nekton survey



Monitoring: surface elevation table



Mortar and pestle



Mortar and pestle 2



Net



Ornithologist



Petri dish



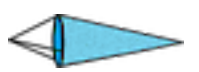
Petri dish with lid



Piezometer

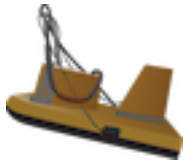


Piling with solar powered light



Plankton net

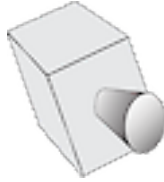
# Human: Science/Research



Portable sub-bottom  
profiling system  
SB-216S



Radioactive thymidine



Radiometer



Ramses spectrometer



Ramses spectrometer  
2



Research Snorkeller



Research vessel



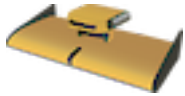
Research vessel 2



Rotary sonar tripod



Satellite-tracked  
drifter



ScanFish



Science report icon



Scientist studying fish



Scientist using laptop  
computer



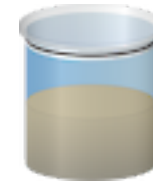
Secchi disk



Sediment and water  
core



Sediment grab



Sediment incubator



Sediment trap



Spectrophotometer



Syringe



Syringe cutoff



Tap



Test tubes



Test tubes 2



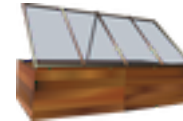
Thermally powered  
submersible glider



Tower receiver



Tsunami sensor and  
transmitting buoy



Turtle egg relocation  
box



Turtle nest anti-  
predatory cage



Undersea habitat



VIMS Fetch  
autonomous  
underwater vehicle



Warning buoy



Water sampler

# Human: Services



Business colleagues



Business: group presentation



Business: man sitting 1



Business: man sitting 2



Business: man sitting 3



Business: planning meeting



Business: woman sitting 1



Business: woman sitting 2



Fire and rescue: fire engine



Fire and rescue: fire station



Fire management: crew member with drip torch 1



Fire management: crew member with drip torch 2



Health care industry: red cross



Hospitality: casino



Hospitality: cruise ship



Hospitality: eco-resort



Hospitality: ferris wheel



Hospitality: flight attendant



Hospitality: liveaboard dive boat



Hospitality: roller coaster



Hospitality: seafood restaurant



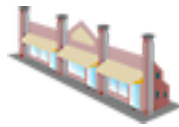
Hospitality: tourism resort



Hospitality: visitor center



Management



Retail: Strip mall



Retail: corner store



Retail: downtown shopping center



Retail: fish market



Retail: gasoline pump



Road salt truck



Wildlife rehabilitation center

# Human: Transport



Airplane (simple 2d)



Aviation: airliner and runway



Aviation: airport



Aviation: airport terminal



Aviation: helicopter



Aviation: light aircraft 1



Aviation: light aircraft 2



Boat: Ngalawa (traditional Swahili boat)



Boat: dinghy



Boat: powerboat



Freight: cargo ship 1



Freight: cargo ship 2



Freight: cargo ship 3



Freight: cargo ship 4



Freight: freight train



Freight: lake freighter



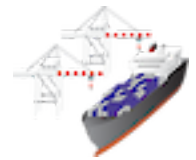
Freight: port 1



Freight: port 2



Freight: port crane 2



Freight: port with cargo ship



Freight: semi-trailer truck



Hospitality: Cruise Ship 2



Local water transport (India)



Military: armored tank



Military: naval destroyer



Public transport: Ferry (Indonesia)



Public transport: bus



Public transport: gondola



Public transport: metro train



Public transport: school bus



River barge



Tour boat (India)



Vehicle: 4WD



Vehicle: SUV



Vehicle: campervan



Vehicle: dump truck



Vehicle: minivan



Vehicle: motorcycle with one rider



Vehicle: motorcycle with two riders



Vehicle: pickup truck



Vehicle: sedan



Vehicle: subcompact car

# Processes: Biological



Biodiversity: algae



Biodiversity: invertebrates



Bioturbation



Concentration; high chlorophyll



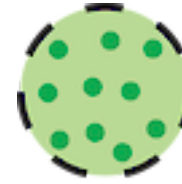
Concentration; high dissolved organic carbon



Concentration; high particulate organic carbon



Concentration; high phytoplankton



Concentration; intermittent chlorophyll



Concentration; intermittent dissolved organic carbon



Concentration; intermittent particulate organic carbon



Concentration; intermittent phytoplankton



Concentration; low chlorophyll



Concentration; low dissolved organic carbon



Concentration; low particulate organic carbon



Concentration; low phytoplankton



Evapotranspiration



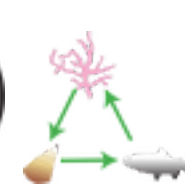
Evapotranspiration; reduced



Food webs; detrital 1



Food webs; detrital 2



Food webs; grazing 1



Food webs; grazing 2



Grazing; Dugong



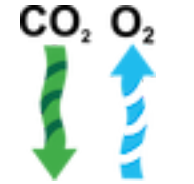
Grazing; Reef fish



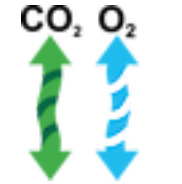
Grazing; Turtle



Grazing; Urchin



Photosynthesis



Photosynthesis/Respiration



Phytoplankton bloom/crash



Process; (x = element) in



Process; (x = element) out



Process; ammonification



Process; calcification



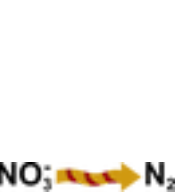
Process; calcium dissolution



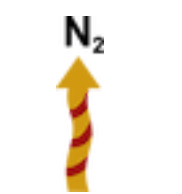
Process; calcium in



Process; calcium out



Process; denitrification 1



Process; denitrification 2



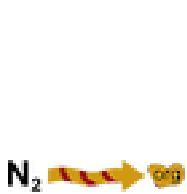
Process; iron in



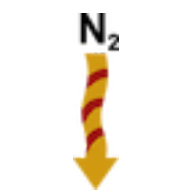
Process; iron out



Process; nitrification



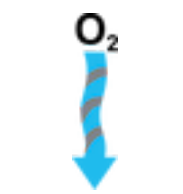
Process; nitrogen fixation 1



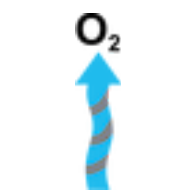
Process; nitrogen fixation 2



Process; organic carbon release



Process; oxygen in



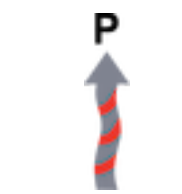
Process; oxygen out



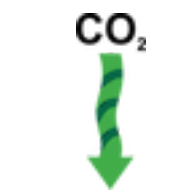
Process; phosphate remineralization



Process; phosphorus in



Process; phosphorus out



Process; primary production



Process; primary production high

Processes: Biological



Process; primary production low



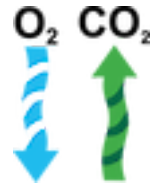
Process; respiration



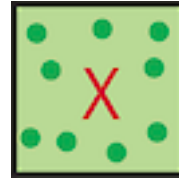
Process; respiration high



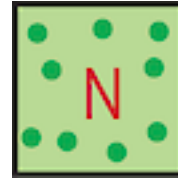
Process; respiration low



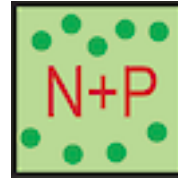
Respiration



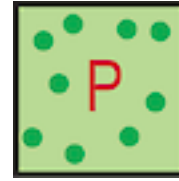
Response, Bioassay; high; (x = symbol)



Response, Bioassay; high; N



Response, Bioassay; high; N+P



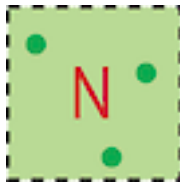
Response, Bioassay; high; P



Response, Bioassay; high; light



Response, Bioassay; low; (x = element)



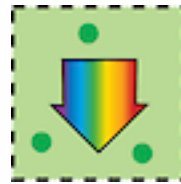
Response, Bioassay; low; N



Response, Bioassay; low; N+P



Response, Bioassay; low; P



Response, Bioassay; low; light



Seabird guano



Total organic carbon (TOC)



Uptake; iron

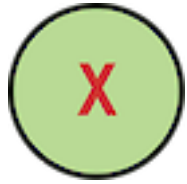


Uptake; nitrogen



Uptake; phosphate

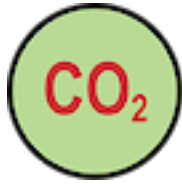
# Processes: Chemical



Concentration: high  
(x=element)



Concentration: high  
ammonium



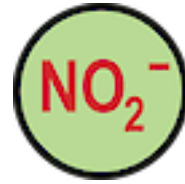
Concentration: high  
carbon dioxide



Concentration: high  
dissolved oxygen



Concentration: high  
nitrate



Concentration: high  
nitrite



Concentration: high  
nitrogen



Concentration: high  
nitrogen and  
phosphorus



Concentration: high  
oxygen



Concentration: high  
ozone



Concentration: high  
phosphate



Concentration: high  
phosphorus



Concentration: high  
salinity



Concentration: high  
silicate



Concentration: high  
sulfate



Concentration:  
intermittent  
(x=element)



Concentration:  
intermittent  
ammonium



Concentration:  
intermittent carbon  
dioxide



Concentration:  
intermittent dissolved  
oxygen



Concentration:  
intermittent nitrate



Concentration:  
intermittent nitrite



Concentration:  
intermittent nitrogen



Concentration:  
intermittent nitrogen  
and phosphorus



Concentration:  
intermittent oxygen



Concentration:  
intermittent ozone



Concentration:  
intermittent phosphate



Concentration:  
intermittent  
phosphorus



Concentration:  
intermittent salinity



Concentration:  
intermittent silicate



Concentration:  
intermittent sulfate



Concentration: low  
(x=element)



Concentration: low  
ammonium



Concentration: low  
carbon dioxide



Concentration: low  
dissolved oxygen



Concentration: low  
nitrate



Concentration: low  
nitrite



Concentration: low  
nitrogen



Concentration: low  
nitrogen and  
phosphorus



Concentration: low  
oxygen



Concentration: low  
ozone



Concentration: low  
phosphate



Concentration: low  
phosphorus



Concentration: low  
salinity



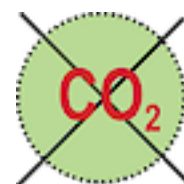
Concentration: low  
silicate



Concentration: low  
sulfate



Concentration: zero  
(x=element)



Concentration: zero  
carbon dioxide



Conductivity



Delta: high  
(x=element)



Delta: high del 13C

# Processes: Chemical



Delta: high del 15N



Delta: intermittent (x=element)



Delta: intermittent del 13C



Delta: intermittent del 15N



Delta: low (x=element)



Delta: low del 13C



Delta: low del 15N



Limitation (x=element)



Limitation: carbon



Limitation: carbon dioxide



Limitation: exclusive (x=element)



Limitation: nitrogen



Limitation: phosphorus



Limitation: primary (x=element)



Limitation: secondary (x=element)



Salinity extremes



Total nitrogen (TN)



Total phosphorus (TP)



Volatile organic compounds



pH: acidic



pH: alkaline



pH: neutral



# Processes: Inputs/flows



Antibiotics



Atmospheric nitrogen



Atmospheric wind/rain



Groundwater



Inputs: atmospheric carbon dioxide



Inputs: atmospheric lead



Inputs: atmospheric mercury



Inputs: atmospheric nitrogen



Inputs: atmospheric particulates



Inputs: atmospheric phosphorus



Inputs: atmospheric sulphur



Inputs: bacteria



Inputs: conductivity



Inputs: dissolved organic carbon



Inputs: freshwater



Inputs: gas



Inputs: humic stained water



Inputs: iron stained water



Inputs: nutrients (non-point source)



Inputs: nutrients 1



Inputs: nutrients 2



Inputs: nutrients, toxins, sediment



Inputs: particulate organic carbon



Inputs: saltwater



Inputs: sediments 1



Inputs: sediments 2



Inputs: sediments 2



Inputs: sediments and nutrients



Inputs: sewage



Inputs: toxicants



Inputs: toxics



Inputs: trash



Pathogens



Radioactive materials



Toxicants: high



Toxicants: low



Toxicants; lead



Toxicants; organo-chlorine



Treated Effluent

# Processes: Modifiers



Certainty



Dynamic



Female symbol



High certainty



High uncertainty



Infinity symbol



Introduced species



Introduced species 2



Male symbol



Negative cross



Positive check mark



Potentially negative



Potentially positive



Uncertainty



Uncertainty 2

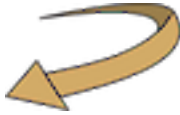
# Processes: Physical



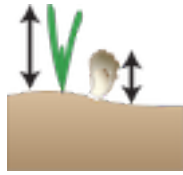
Accumulation



Altered hydrology



Bank erosion



Bottom roughness



Burial



Concentration: high turbidity



Concentration: intermittent turbidity



Concentration: low turbidity



Deposition/scouring



Deposition: mercury



Deposition: mercury 2



Deposition: nitrate



Deposition: nitrate 2



Deposition: sediment



Deposition: sediment 2



Deposition: sulfate



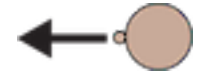
Deposition: sulfate 2



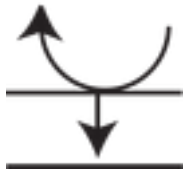
Depth mean flow



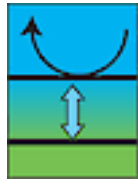
Desiccation



Desorption



Diffusion



Diffusive sublayer thickness



Directional arrow



Directional arrow 2



Directional arrow 3



Erosion



Exchange: freshwater



Exchange: gas



Exchange: humic stained water



Exchange: iron stained water



Exchange: nutrients



Exchange: saltwater



Exchange: saltwater limited



Exchange: sediments



Exchange: sediments and nutrients



Flushing



Flux: freshwater



Flux: gas



Flux: humic stained water



Flux: iron stained water



Flux: nutrients



Flux: saltwater



Flux: sediments



Flux: sediments and nutrients



Integral length scale



Kolmogorov microscales



Light availability



Light: full sunlight



Light: no light



Light: organic absorption

# Processes: Physical



Light: water absorption deep



Light: water absorption shallow



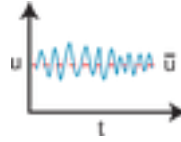
Limitation: diffusion



Limitation: hydrodynamic



Limitation: light



Mean flow speed



Mixing



Mixing time



Precipitation



RMS (root mean square) turbulence intensity



Reaction time



Residence time: long



Residence time: short



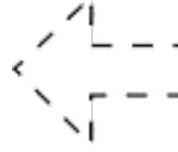
Reynolds number



Salinity gradient



Sediment



Sediment movement



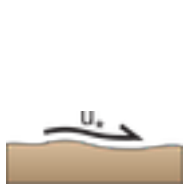
Sediment resuspension



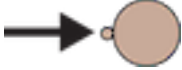
Sediment resuspension 2



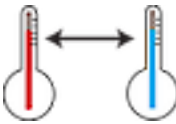
Sediment suspension



Shear velocity



Sorption



Temperature variation



Temperature: high



Temperature: low



Temperature: moderate



Temperature: very high



Tide



Tide: astronomical



Tide: meteorological



Transport: dissolved organic carbon



Transport: freshwater



Transport: gas



Transport: humic stained water



Transport: iron stained water



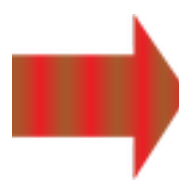
Transport: nutrients



Transport: particulate organic matter



Transport: saltwater



Transport: sediment and nutrients



Transport: sediments



Turbulent eddy



Turbulent energy dissipation rate



Upwelling



Wake turbulence

# Prokaryotes and Viruses: Bacteria/cyanobacteria/archaea



Acinetobacter spp.  
(Bacteria)



Anabaena



Archaea



Bacterium



Bacterium with  
prophage



Bacteroidetes



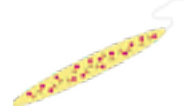
Cocciid bacterium



Cyanobacteria



Cyanobacterial mat



Infected bacterium



Jannaschia spp



Lyngbya majuscula



Nodularia spp



Synechococcus spp

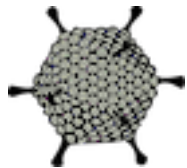


Trichodesmium spp



sigmoid bacterium

# Prokaryotes and Viruses: Viruses



Adenovirus



Virus



Virus inserting DNA