

OPIHI: Key intertidal species list

The organisms on this list are easy to identify, common, and important ecologically or in terms of conservation. Not all of these species will be present at all sites. Your species list does not need to be inclusive of all of these organisms, nor should it be limited by this list.

Species	Ecological/conservation significance
Invertebrates	
Ashy sea cucumber (loli pua) <i>Holothuria cinerascens</i>	Detritivore; abundance may indicate high levels of organic matter in benthos
Barnacles Several species exist in Hawaii, but they are difficult to tell apart without practice.	Show zonation patterns. Grab tiny organisms with feathery feet. Eaten by whelks.
Black anthopleura <i>Anthopleura nigrescens</i>	Carnivorous on small organisms. Show zonation patterns.
Black oblong rock-boring urchin ('ina) <i>Echinometra oblonga</i>	Often numerically dominant; important herbivores, bioeroders (break down reef)
Black purse shell (nahawele, papaua) <i>Isognomon californicum</i>	Filter feeders, may be endemic to Hawaii. Show zonation patterns.
Black sea cucumber (loli okuhi kuhi) <i>Holothuria atra</i>	Detritivore; abundance may indicate high levels of organic matter in benthos; usually in lower-energy areas
Brittle stars <i>Ophiocoma erinaceus</i> (black brittle star) & <i>Ophiocoma picea</i> (pied brittle star) are the most common intertidal species	Detritivores; abundance may indicate high levels of organic matter in benthos (although also substrate-related; they need rocks to hide under)
Brown purse shell (nahawele, papaua) <i>Isognomon perna</i>	Filter feeders
Collector urchin (hawa 'e maoli) <i>Tripneustes gratilla</i>	Important herbivores, may eat alien algae; taken for food
Cone snails (pupu 'ala) <i>Conus</i> spp. <i>Conus abbreviatus</i> (dotted cone) is endemic	Carnivores (Careful! do not handle these. Many have toxic stings)
Cowries (leho) <i>Cypraea</i> spp. <i>Cypraea caputserpentis</i> (leho kupa) & <i>Cypraea mauritiana</i> (leho ahi) are the most common intertidal species	Most are herbivores; at-risk group due to heavy collecting; Hawaiian cultural significance
Difficult sea cucumber (loli) <i>Holothuria difficilis</i>	Detritivore; abundance may indicate high levels of organic matter in benthos
Elegant hermit crab (unauna) <i>Calcinus elegans</i>	Scavengers; excellent indicators of wave exposure and zonation patterns; collected by aquarists
False opihi (opihawa) <i>Siphonaria normalis</i>	Grazers, display zonation patterns. Unlike the true opihi, these are not edible.

Glass anemone <i>Aiptasia pulchella</i>	Carnivorous on small organisms. Show zonation patterns.
Hawaiian mussel (nahawele, kio-nahawele) <i>Brachidontes crebristriatus</i>	Filter feeders, endemic to Hawaii. Show zonation patterns.
Helmet urchins (ha 'uke 'uke kaupali) <i>Colobocentrotus atratus</i>	Herbivores; collected for food. These are generally found in high-wave energy areas. If you find them, keep an eye out for waves! You may want students to count these using binoculars and standing at a safe distance.
Hidden hermit crab (unauna) <i>Calcinus latens</i>	Scavengers; excellent indicators of wave exposure and zonation patterns; collected by aquarists
Left-handed hermit crab (unauna) <i>Calcinus laevimanus</i>	Scavengers; excellent indicators of wave exposure and zonation patterns; collected by aquarists
Leopard sea cucumber (loli) <i>Holothuria pardalis</i>	Detritivore; abundance may indicate high levels of organic matter in benthos
Light-spotted sea cucumber (loli) <i>Holothuria hilla</i>	Detritivore; abundance may indicate high levels of organic matter in benthos
Littorines, most common are: <i>Littoraria pintado</i> (pipipi kolea, dotted periwinkle) <i>Nodilittorina hawaiiensis</i> (endemic periwinkle)	Herbivores, excellent for demonstrating intertidal zonation patterns
Long-spined urchins (wana) <i>Echinothrix</i> spp.	Important herbivores, bioeroders (break down reef)
Nerites, most common are: <i>Nerita picea</i> (pipipi, black nerite) <i>Nerita polita</i> (kupe'e, polished nerite)	Herbivores, excellent for demonstrating intertidal zonation patterns; collected by people for food; kupe'e with Hawaiian cultural significance
Opihi <i>Cellana</i> spp.	Herbivores; heavily collected for food. True opihi are generally found in high-wave energy areas. If you find them, keep an eye out for waves! You may want students to count these using binoculars and standing at a safe distance.
Pink/green rock-boring urchin ('ina) <i>Echinometra mathaei</i>	Often numerically dominant; important herbivores, bioeroders (break down reef)
Red pencil urchins (ha uke 'uke 'ula 'ula) <i>Heterocentrotus mammillatus</i>	Taken by aquarium/curio collectors
Seurat's hermit crab (unauna) <i>Calcinus seurati</i>	Scavengers; excellent indicators of wave exposure and zonation patterns; collected by aquarists

Sponges (hu'ahu'a) (individual species usually too difficult to identify)	Filter feeders; increases in abundance may indicate increased levels of organic matter in water
Tunicates (individual species usually too difficult to identify)	Filter feeders; increases in abundance may indicate increased levels of organic matter in water
Whelks, most common are: <i>Morula granulata</i> (maka 'awa, black knobby drupe) <i>Morula uva</i> (grape drupe) <i>Drupa ricina</i> (makaloa, spotted drupe)	Carnivores
White-spotted sea cucumber (loli) <i>Actinopyga mauritiana</i> Plump sea cucumber <i>Actinopyga obesa</i>	Detritivore; indicates high wave splash, strong water circulation; <i>A. obesa</i> looks like <i>A. mauritiana</i> , minus the white spots.
Zebra hermit crab (unauna) <i>Clibanarius zebra</i>	Scavengers; excellent indicators of wave exposure and zonation patterns; collected by aquarists
Algae	
<i>Acanthophora spicifera</i>	Invasive alien algae; may compete with native algae, including edible limu
<i>Bryopsis</i> spp. & <i>Cladophora</i> spp.	Indicator of freshwater run-off and nutrients in the water
<i>Enteromorpha</i> spp.	Indicator of freshwater run-off and nutrients in the water
Gorilla ogo <i>Gracilaria salicornia</i>	Invasive alien algae; thought to compete with native algae, including edible limu
<i>Gracilaria Tikvahiae</i>	Native <i>Gracilaria</i> , key ingredient in poke.
Green bubble algae <i>Dictyosphaeria cavernosa</i>	Indicator of nutrients in the water and lack of grazing pressure. Competes with native algae and overgrows coral.
<i>Hypnea musciformis</i>	Invasive alien algae; thought to compete with native algae, including edible limu; washes up on beaches in huge, smelly mats
<i>Kappaphycus</i> sp.	Invasive alien algae, overgrows coral.
<i>Laurencia</i> spp.	Often numerically dominant, particularly in the lower intertidal zone and areas of high wave energy; basal species; harvested species
Limu kala <i>Sargassum</i> spp.	Often numerically dominant, particularly in the lower intertidal zone and areas of high wave energy; basal species; harvested species
<i>Padina</i> spp.	Often numerically dominant; basal species; generally mid-intertidal or in areas semi-protected from waves.
Sea lettuce (Limu palahalaha) <i>Ulva</i> spp.	Indicator of freshwater run-off and nutrients in the water; basal species; harvested species

<p>Various other edible limu Consider counting these if you can confidently identify them.</p>	<p>Several edible limu species are in decline due to overharvesting and competition with alien species.</p>
<p>Fish <i>Acanthurus triostegus</i> (manini, convict tang) <i>Abudefduf abdominalis</i> (mamo, Hawaiian sergeant) <i>Abudefduf sordidus</i> (kupipi, black spot sergeant) Hawaiian flagtail, (aholehole, <i>Kuhlia sandvicensis</i>) Raccoon butterflyfish (kikakapu, <i>Chaetodon lunula</i>)</p>	<p>Several reef fishes, including harvested and collected species, shelter in tide pools when young. Many of these will be hard to identify, as juvenile coloration is often different from adults. The listed species are easy to identify, but may be hard to count as they zip around!</p>