Table 1. Ecologically and culturally important marine and freshwater ‘keystone species ‘of the Pacific Islands fishing communities. Source: Abraham & Lambeth, 2001; Aitken, 1930; Alexander, 1902; Dye, 1983; Gillett, 2011; Gillett & Kearney, 1983; Govan, 1996; Hooper et al., 2012; Johannes & Yeeting, 2000; Kirch & Dye, 1979; Kramer, 1994; Kronen & Vunisea, 2007; Lambrides & Weisler, 2016; Levine & Sauafea-Le’au, 2013; Lieber, 1994; Luomala, 1980; Matthews, 1991; Nichols, 1991; Ono & Addison, 2009; Solomona et al., 2009; Takekawa, 2000; Teulières, 1992; Thaman et al., 2017; Thaman, 2016; Tiraa-Passfield, 1996, 1997; Toganivalu & Beauclere, 1915; Veitayaki, 2008; Vunisea, 2016.

|  |  |  |
| --- | --- | --- |
| **Common name** | **Species/family** | **Uses** |
|
| ***Plants*** | | |
| Seaweeds and algae | *Caulerpa* spp*., Gracilaria* spp*., Laminaria* spp*., Sargassum* spp*.* | Food, animal feed, sale, medicine, water purification, habitat, spawning/breeding grounds |
| Sea grasses | *Halodule* spp*., Halophila* spp*., Syringodium isoetifolium.* | Food, animal food, medicine, water purification, animal habitats, spawning/breeding grounds |
| Mangroves | *Bruguiera gymnorrhiza, Rhizophora stylosa, R. samoensis, R. mangle, Avicennia marina* | Medicine, shelter for juvenile species and birds, firewood, trap making, toys, climbing spots, soil retention, salt spray protection, timber, dye |
| Coastal littoral species | *Inocarpus fagifer, Intsia bijuga, Pandanus* sp*., Cocos nucifera, Hibiscus tiliaceus* | Hermit crab habitat, erosion control, timber, firewood, shade |
| Riparian vegetation | *Ipomoea pes-caprae, Sphagneticola trilobata, Rhizophora* spp*.* | Fish habitat, spawning grounds, erosion/sediment control |
| **Corals and other coral-like species** | | |
| Hard corals | *Acropora* spp*., Diploria spp., Favia* spp*., Porites* spp*.* | Fish habitat, beautification, aquarium displays, tourism attraction, jewelry, home decorations for coral collectors |
| **Mollusks (gastropods, bivalves, cephlapods)** | | |
| Trochus (Trochiidae) | *Trochus niloticus* | Food, shells used for jewelry, buttons, and home decorations, conchology specimens |
| Triton shells (Charoniidae) | *Charonia tritonis, C.lampas, C.variegata, Cymatium* spp*.* | Meeting herald, food, sale, decoration, natural predator for crown of thorns starfish |
| Conch shells (Strombidae) | *Lambis* spp*.* and *Strombus* spp*.* | Jewelry, shell curio, water purification by regulating seagrass detritus abundance |
| Cone shells (Conidae) | *Conus marmoreus* | Food for other marine predators, medicine, shell curio |
| Cowries (Cypraeidae) | *Cypraea spp., Ovula spp., Callistocypraea (Cypraea) aurantium,* | Traditional lure, food, sale |
| Giant Clams (Cardiidae) | *Tridacna gigas, T. maxima, T. derasa, T. squamosa, Hippopus hippopus, H. porcellanus* | Food, shell curio, decoration |
| Oyster | *Pinctada margaritifera, Spondylus* spp*., Pteria spp.* | Food, shells used to make jewelry and buttons, filter feeder |
| Other bivalves | *Tellina* spp*., Anadara* spp*.* | Refuge from predation, filter feeders, shell curio, compost, jewelry, food, sale, stabilize coastlines (shells included in sea walls), nutrient pollution mitigation |
| Octopus (Octopodidae) | *Octopus cyanea* | Food, sale, bait, shell curio, no-take zone recovery indicator, art motifs |
| Nautilus (Nautilidae) | *Nautilus belauensis, N. pompilius* |  |
| **Crustaceans** | | |
| Crabs | *Scylla serata, Cardisoma carniflex, C. hirtipes, Grapsus* spp*.* | Food, sale, bait, shell curio, pig food, signify rise of palolo (*Eunice viridis*) |
| Hermit crabs and fiddler crabs | *Coenobita spp., Pagurus* spp., *Diogenes* spp*., Uca* spp*., Birgus latro* | Bait, sand aeration, food for other marine crabs and fish, sale |
| Lobsters (Palinuridae) | *Panulirus versicolor, P. penicillatus, P. longipes femoristriga, P. ornatus, Parribacus caledonicus* | Food, sale, export, shell curio |
| Prawns and shrimps | *Palaemon* sp*., Macrobrachium* spp*., Squilla* spp*.* | Food, sale, bait, food for juvenile fish, detritus feeders |
| **Sharks, rays and eels** | | |
| Sharks | *Sphyrna* spp*., Eusphyrna* spp*., Hexanchus* spp*., Alopias* spp*., Cetorhinus spp., Carcharhinus* spp*.* | Top predator, totemism, legends, teeth used as money/exchange items, ornamentation |
| Rays | *Mobula* spp*., Rhinoptera spp.* | Plankton abundance control, food, sale, regulate nutrient cycling, top predators |
| Eels | Muraenidae (marine eels), Anguillidae (freshwater eels) | Food, sale, top carnivores, totemism |
| **Finfish** | | |
| Tuna | *Katsuwonus pelamis, Thunnus alalunga, T. albacares, T. obesus,* *Scomberomorus commerson* | Top predators, food, sale, export, bait, totemism |
| Billfish | *Xiphius* spp*., Tetrapturus* spp*., Istiompax* spp*., Kajikia* spp*., Tetrapturus* spp*., Xiphias* spp*.* | Sport, top predator, fishing tourism |
| Parrotfish | *Scarus* spp., *Chlorurus* spp.*, Bolbometopon muricantum, Hipposcarus longiceps* | Sand production, algal control, food, sale, totemism |
| Wrasses | *Cheilinus undulatus, Cheilinus* spp*.* | Food, sale, remove mucous, parasites and scales from larger fish |
| Groupers, seabasses and coral trout | *Epinephelus* spp*.*, *Cephalophoxus*, *Plectropomus* | Food, sale |
| Emperors | *Lethrinus* spp*.* | Food, sale |
| Surgeonfish | *Naso unicornis, Naso* spp., *Acanthurus triostegus, Ctenochaetus striatus* | Food, sale, bait, algal control |
| Squirrelfish and soldierfish | *Myripristis* spp*., Holocentrus* spp*., Sargocentron* spp., *Neoniphon* spp*.* | Food, sale, baitfish |
| Rabbitfish | *Siganus argenteus, S. punctatus, S. spinus, S. fuscescens, S. vermiculatus* | Food, sale, baitfish, algal control, totemism, calendar fish |
| Trevallies | *Carangoides* spp*., Caranx spp.* | Food, sale |
| Mullets | *Crenimugil* spp*., Mugil* spp*., Liza* spp*.* | Food, sale, baitfish |
| Snappers | *Lutjanus fulvus, L. sebae, L.kasmira, L.gibbus, L.bohar* | Food, sale |
| Milkfish | *Chanos chanos* | Food, algal control, skin triggers alarm when fish is injured to warn other fish to hide from a nearby predator |
| ***Other invertebrates*** | | |
| Bêche-de-mer | *Actinopyga miliaris, Holothuria (Microthele) nobilis, H.(Microthele) fuscogilva , H. (Metriatyla) scabra, H. (Halodeima) atra* | Food, sale, export, benthic cleaner, pollution control, fish poison |
| ***Reptiles*** | | |
| Turtles | *Chelonia mydas, Eretmochelys imbricata, Caretta caretta.* | Chiefly food, jewelry, shell curio, totemism, art motifs |
| Sea snakes | *Laticauda* spp*., Hydrophis* spp*., Thalassophina* spp*.* | Swimming habit of the sea snake as weather forecast prediction |
| ***Seabirds*** | | |
| Frigatebirds, boobies, noddies, petrels | *Fregata* spp*., Sula* spp*., Anous* spp*., Puffinus* spp*., Thalasseus* spp. | Chiefly food, ornamentation, art motifs, weather gauge, navigation guide, fish aggregation indicators |
| ***Mammals*** | | |
| Whales and dolphins | *Species not specified* | Food, sale, export, oil producer, medicine, teeth used for dowries, totemism |
| Dugong | *Dugong dugon* | Food, algal control |