

## Maui Ocean Center's Marine Life Profile: Limpets

Originally Ran in the Maui News: Ka Moolelo Moana (Ocean Stories) Column

Common Name: Limpets

Hawaiian Name: *opihi*

Found in Exhibit: N/A

Mention the word “limpet,” and some folks might wonder what you’re talking about. But use the Hawaiian word “*opihi*,” and they will know you mean the salty morsel that has long been a popular offering at many a family *paina* (feast). Today, the *opihi*, an edible limpet that is actually a type of snail, has become a rare, expensive delicacy. *Opihi* available for purchase may come from such far off places as Ireland where limpets are harvested for export to markets here in Hawaii.

In old Hawaii, men, women, and children often joined together to pick one of four different varieties of *opihi* endemic (found nowhere else) to these islands. It was dangerous work. *Opihi* favor surf-pounded rocky shorelines where a chance wave can easily sweep an unwary picker out to sea. So hazardous was this activity, that *opihi* gathering was described as *he i'a make*, referring to a fish or other creature that could bring death. Nor would anyone dare eat an *opihi* on shore while others were still out collecting; such kapu-breaking behavior might result in tragedy for one still picking.

*Opihi* pickers must know the habits of the *opihi*. When disturbed, *opihi* will clamp down hard and be difficult to dislodge from their wave-lashed habitat. They are best harvested when feeding and relaxed, grazing on algae, their main food source. Similar to other snails, an *opihi* is equipped with a broad muscular foot for clinging and crawling. It has tentacles, a head with eyes and a mouth at the end of a tubular structure called a proboscis. The *opihi*'s soft body mass is protected by a hard shell shaped like a cap. This low-profiled “cap” offers little resistance to water pouring over it. Grooves and ribs drain water down the sides of the shell, further protecting the inhabitant.

Each *opihi* makes its own shallow depression in the rock beneath it. This depression becomes its home base or “scar,” where it will return after creeping about to forage for food. The edge of the *opihi*’s shell fits snugly into its scar, protecting the soft body underneath from drying out during periods of low tide. The *opihi* uses a file-like feeding structure called a radula to carve out its homescar and to scrape away algae. Some *opihi* are capable of lifting up their shells to ventilate or cool themselves during periods of unusual sun exposure.

*Opihi* reproduce by broadcast spawning. Cued by subtle environmental changes, males and females release sperm or eggs into the water, where fertilization takes place. Resulting larvae — called veligers — drift with plankton for several days before settling onto shoreline rocks and developing into limpets.

The Hawaiian blackfoot or *opihi makaiauli* is the easiest to gather because it avoids the roughest, most constant surf. The edges of its shell are the smoothest of all species of *opihi*. In contrast, the yellowfoot *opihi* or *opihi ailinalina*, prefers the continual splash of waves and lives closer to the low tide mark or even below it. This species is often coated with algae. The edge of its scalloped shell is so sharp that Hawaiians used it as a scraper and for shredding coconut. The yellowfoot is considered better eating than the blackfoot.

The most prized of the edible *opihi* are the largest and most difficult to obtain: the *opihi ko’ele* or kneecap *opihi*. The foot of the *ko’ele* may be either yellow or gray. Hiding in surf zones to depths of ten feet, these algae and barnacle-encrusted *opihi* can be 4 inches across. Their bleached white shells have been unearthed at archeological sites scattered throughout the islands. The shells were used for removing the skins from cooked taro and breadfruit. No longer commonly found on O’ahu and Kaua’i, their last remaining habitat may be dangerous, secluded spots on Moloka’i and Kaho’olawe.

The fourth endemic species of *opihi* in Hawaii is the greenfoot, but it prefers the distant limestone shores of the northwestern chain to the basalt shores of the populated islands. The false *opihi* or *opihi awa* mimics its counterparts in appearance but tastes bitter. It is

actually more closely related to land snails than to true limpets. Ancient Hawaiians did not eat this one but used it for medicine and “sorcery.” Its prominent ribs set it apart from the others, with the trough between the ribs being black in color.

*Opihi* must have a shell diameter of at least 1.25 inches in order to be harvested, and the diameter of the foot must be at least ½ inch. Pickers may find it difficult to check these details while skirting slippery rocks and dodging waves, but doing so is crucial to the survival of the tradition. Those who hope to teach their grandchildren how to pick should also be careful not to deplete an area of all of the largest limpets — the ones most likely to reproduce. Over harvesting has already led to slim pickings of what was once a plentiful and relished food source. Extra care and vigilance is necessary to help preserve the Hawaiian *opihi* for the enjoyment of future generations.

