

## Marine Invertebrates

### Other Crustaceans

#### Unauna or Hermit crabs



*Dromia dormia*  
Courtesy Keoki Stender

*Aniculus hopperae*

*Calcinus hazletti*

*Calcinus laurentae*

#### Crabs

*Aethra edentata*

*Carpilius maculatus*

*Dromia dromia*

*Ligia hawaiiensis*

*Lybia edmondsoni*

*Pseudopalicus oahuensis*

#### Shrimps



*Hymenocera picta*  
Courtesy Keoki Stender

*Cinetorhynchus hawaiiensis*

*Cinetorhynchus hendersoni*

*Gnathophyllum precipuum*

*Hymenocera picta*

*Levicularis mammilata*

*Liomera supernodosa*

*Metapenaeopsis* sp.

*Rhynchocinetes rathbunae*

*Stenopus earlei*

#### SPECIES STATUS:

IUCN Red List - Not considered

All Endemic except for *Carpilius*, *Dromia*, and *Hymenocera*

**SPECIES INFORMATION:** The following are the Hawaiian, common, and scientific names for the Unauna or hermit crabs, true crabs, and shrimps: Hopper's hermit crab (*Aniculus hopperae*), Hazlett's hermit crab (*Calcinus hazletti*) and Laurent's hermit crab (*Calcinus laurentae*); flat elbow

crab (*Aethra edentata*), alakuma or 7-11 crab (*Carpilius maculatus*), makua-o-ka-lipoa or sponge crab (*Dromia dormia*), *Ligia hawaiiensis* (no common name), kūmimi pua or Hawaiian pom pom crab or (*Lybia edmondsoni*), and button crab (*Pseudopalicus oahuensis*); Hawaiian hinge-beaked shrimp (*Cinetorhynchus hawaiiensis*), Henderson's hinge-beaked shrimp (*Cinetorhynchus hendersoni*), Hawaiian cave shrimp (*Gnathophyllum precipuum*), harlequin shrimp (*Hymenocera picta*), red pencil urchin shrimp (*Levicaris mammilata*), knotted liomera (*Liomera supernodosa*), bicolor sand shrimp (*Metanpenaeopsis sp.*), Rathbun's hinge-beaked shrimp (*Rhynchocinetes rathbunae*), and Earl's coral shrimp (*Stenopus earlei*). The unauna, alakuma, button crab, hinge-beaked shrimp, Hawaiian cave shrimp, and the bicolor sand shrimp are nocturnal. Hermit crabs are scavengers, Earl's coral shrimp are cleaners, alakuma crush other crustaceans and snails, button crabs feed on algae, and kūmimi pua use anemones on their claws to capture prey and feed on invertebrates. Harlequin shrimp are predators of seastars, including crown-of-thorns starfish. It is also monogamous and pair-bonding. Specific feeding information for the other species is unknown, but they are likely scavengers. All species have separate sexes and reproduce through copulation. All females brood eggs under their tails, except for the bicolor sand shrimp that releases eggs directly into the ocean. Newly hatched larvae are part of the plankton community for weeks to months. Makua-o-ka-lipoa is the largest sponge crab in the world. Rathbun's hinge-beaked shrimp is known as the mandarin shrimp in the aquarium trade.

**DISTRIBUTION:** Earl's coral shrimp is found off O'ahu and Kaua'i. The other species are found throughout the Hawaiian Islands. Knotted liomera is found throughout the Main Hawaiian Islands, but it is more common in the Northwestern Hawaiian Islands.

**ABUNDANCE:** Unknown. Henderson's hinge-beak shrimp are found throughout the islands, but they are abundant of the coast of Kona, Hawai'i. Earl's coral shrimp is rare.

**LOCATION AND CONDITION OF KEY HABITAT:** Most of these crustaceans are bottom dwellers. Hopper's hermit crab has primary habitat in caves and under ledges, but on exposed rocky shores from three feet to seventy feet (one to 21 meters). Hazeltt's and Laurent's hermit crabs live below the intertidal zone from six meters (20 feet) or deeper and occur on branching corals. The flat elbow crab is found on sandy bottom areas and kūmimi pua is found under stones in sand or on rubble in waters from approximately a meter to 30 meters (few feet to 100 feet) deep. The button crab is found on rocky bottom habitat. The shrimp species inhabit a large range of areas. Hawaiian hinge-beak shrimp inhabit finger coral; Henderson's hinge-beak shrimp inhabit shallow, sheltered reefs; and Rathbun's hinge-beak shrimp prefer rocky substrates. Hawaiian cave shrimp are found only in caves. Red pencil urchin shrimp live commensally with the sea urchin *Heteroentrotus mammillatus*. The knotted liomera is found on reef and reef flats. Bicolor sand shrimp prefer sandy rubble while Earls' coral shrimp inhabit caves, crevices and under ledges. Hinge-beak shrimp live on reefs.

**THREATS:**

- Aquarists collect alakuma, kūmimi pua, and makua-o-ka-lipoa, the hinge-beaked shrimps, and harlequin shrimp.

**CONSERVATION ACTIONS:** The goals of conservation actions are to not only protect current populations, but to also establish further populations to reduce the risk of extinction. In addition to common state-wide and island conservation actions, specific actions include:

- Maintain healthy populations with appropriate fishing regulations, enforcement, and education.

**MONITORING:**

- Survey for populations and distribution in known and likely habitats.

**RESEARCH PRIORITIES:**

- Improve understanding of factors affecting the species population sizes and distributions;
- Support aquaculture research to develop captive breeding for species used in the aquarium trade.

**References:**

- Fiedler GC. 2002. The influence of social environment on sex determination in harlequin shrimp (*Hymenocera picta*: Decapoda, Gnathophyllidae). *Journal of Crustacean Biology* 22 (4): 750-761.
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