The Role of Purple Hermit Crabs, Coenobita brevimanus, as Forest Frugivores

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Vertebrate frugivores play an important role in forests by dispersing seeds and helping improve germination through gut passage. Some frugivores may also be seed predators, where the seed is destroyed through gut passage. On the island of Saipan, the native frugivores are birds, bats, and crabs. This experiment focused on purple hermit crabs, Coenobita brevimanus, which are known to consume fruits, but it is unknown whether purple hermit crabs disperse or predate the seeds they consume. A maximum of ten purple hermit crabs, ranging in size from medium to large individuals, were captured from the forest and kept in captivity. In captivity, they were fed native fruits including Premna, Ficus, Aglaia, Cynometra, Neisosperma, and non-native fruits including (papaya) collected in the wild. The cage was inspected to see if fruits were consumed but the seeds were not ingested. Analysis of predation or dispersal was done using logistic regression. It was hypothesized that purple hermit crabs are beneficial seed dispersers, passing most seeds unharmed for both native and non-native fruiting tree species. As beneficial frugivores, purple hermit crabs could play a significant role in dispersing seeds in the forests of Saipan. Keywords: frugivores, seed dispersers, karst forest, hermit crab

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