Land Crab Study to Commence on Grand Cayman

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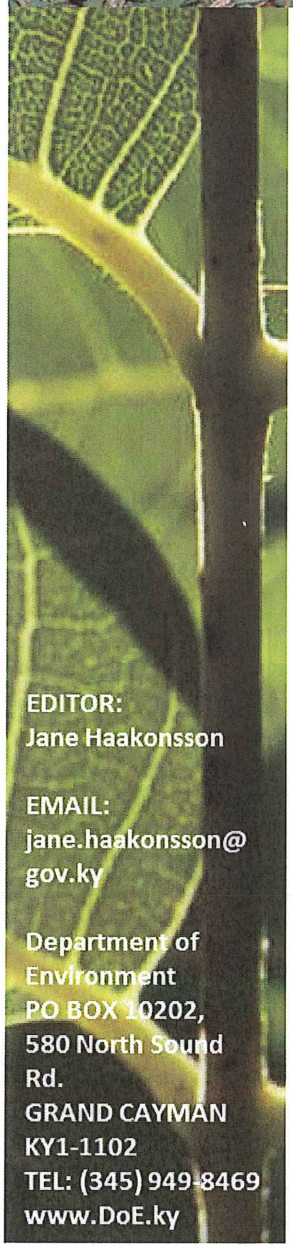

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The White Land Crab (*Cardisoma guanhumi*) and Black Land Crab (*Gecarcinus ruricola*) are found throughout Grand Cayman. While many Caymanian crabbers posses a great deal of knowledge about land crabs, very little scientific information describing these populations exists. The goals of this study are to collect basic biological data, estimate White and Black Land Crab population sizes, and determine peak breeding seasons.

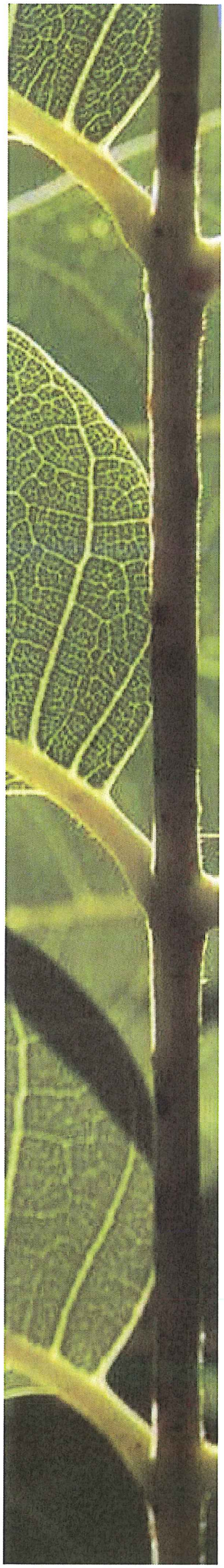
The White and Black Land Crabs are members of the family, Gecarcinidae, and both species inhabit burrows throughout Caribbean Islands (Hartnoll et al., 2006). During the dry season, land crabs are relatively inactive, but seasonal rains during May through August, initiate breeding (Adamczewska et al., 2001; Hostetler et al., 2013).

Following mating, the female crab carries her eggs for about two weeks before migrating and releasing them into the ocean (Baine et al., 2007).

In addition to contributing to the biodiversity and performing important ecological services on Grand Cayman, land crabs are also economically significant as a local food source. Harvesting pressure and rates of road kill are unknown, but is suspected to be increasing with the island's growing human population and vehicular traffic.

Kinsey Tedford is a graduate student of Dr. David Bass (our visiting aquatic invertebrate specialist), and together with the TRU we are preparing a scoping study of Grand Cayman's land crab populations. Data from this study will directly inform Conservation Plans as required under the National Conservation Law including potential sustainable harvest rates.

Knowledge gained from this initial study will also assist conservation efforts made towards the preservation of land crabs and will thus be of value to resource managers in other locations facing similar issues.



The main activities and goals of this project include:

- Survey existing White Land Crab and Black Land Crab populations
- Collect baseline population statistics and morphological data
- Determine critical reproductive timeframes and migratory routes
- Determine major threats contributing to potential population decline
- Provide valuable information for Conservation Plans

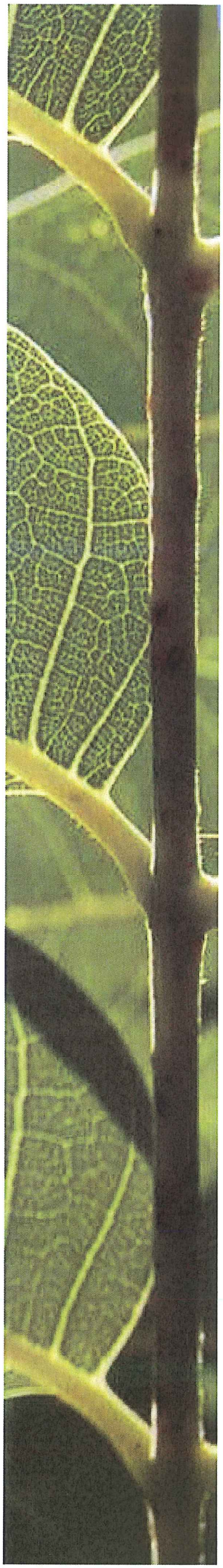
This investigation will take place during the summer of 2016 in coastal environments where land crab populations are known to exist. These habitats include mangrove swamps and other wooded areas with substrates consisting of mud, sand, soil and rocks.

Based on Kinsey's recent visit to the Cayman Islands, two locations have been selected as main areas of interest:

1) along the Queens Highway east of Norhtside
2) Barkers National Park, West Bay.

We will begin this study by sampling populations in these two areas, gathering baseline data to estimate population sizes. Additionally, we plan to note biological characteristics of crabs such as color variations, sex and measurements of the carapace size. Peak spawning periods and seasonal reproductive patterns will be determined by observations of berried females. Thus we will be able to locate the greatest densities of crabs and associate these populations with critical migratory routes to the sea.

Black and White Land Crabs along the Queens Highway, North Side. Crabs come out in huge numbers to spawn and often have to cross the busy road to get to the sea.



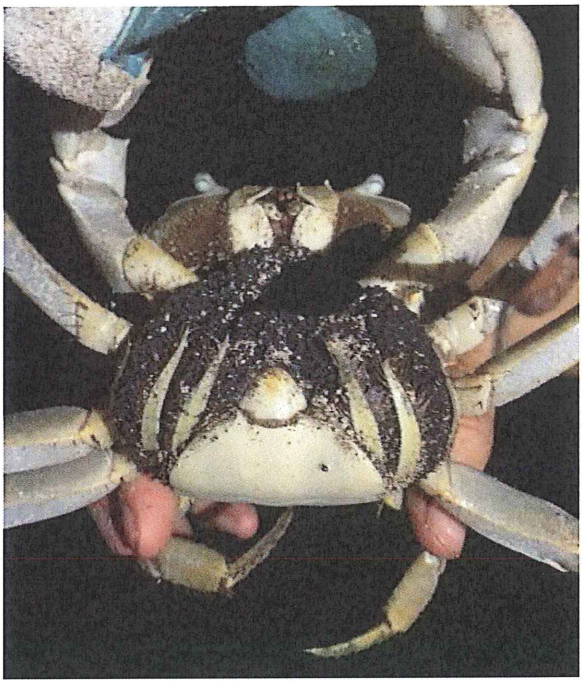
Another important aspect of this project is determining the major factor(s) contributing to the suspected decline of White Land Crab and Black Land Crab populations. Causes of potential decline may be due to vehicular traffic, habitat destruction, over-exploitation and isolation from resources such as food, shelter, and potential mates. But so far no data address these concerns.

Preliminary studies were conducted during May 2015. We noted increased activity around dusk with rainfall enhancing these movements. Generally, it seemed Black Land Crabs were found further inland than White Land Crabs and Black Land Crabs preferred rocky areas while White Land Crabs preferred softer sandy substrates. However, mixed populations of both species were found at each study site. Although these observations may be generally known, distribution patterns of both species are currently undocumented.

This study also has the potential to benefit society by serving as a model for other locations concerned with protecting land crabs or other species facing similar situations. Solutions provided in this research are relevant because habitat destruction, road construction for motorized vehicles, and human consumption of wildlife are increasing problems in many regions of the world.

If you have any questions or comments about the upcoming study, please contact the editor (page 2) or David and Kinsey directly on: dbass@uco.edu, ktedford1@uco.edu.

References for this article are available on request.



Kinsey honing in on her crab catching and handling skills at night in Barkers National Park. First catch was a berried female White Land Crab.