

**OTHER PESTS THAT RESEMBLE  
COCONUT RHINOCEROS BEETLE (CRB)**

Grubs of other scarab beetles found in Hawai‘i, such as the Oriental flower beetle, *Protaetia orientalis*, look similar but do not grow as large as CRB larvae.

**Oriental flower beetle adult / grub**



inverted U on underside of grub's rear

**CRB grub**



	FLOWER BEETLES	COCONUT RHINO BEETLE
<b>GRUB</b>	less than 1" in length	up to 4" length
	smooth head capsule	bumpy head capsule <i>(above, right)</i>
	crawls straight or flips on its back when disturbed	curls into a C-shape, crawls on its side
	abdomen is firm when squeezed; inverted U marking on underside of rear <i>(above, center)</i>	abdomen is soft when squeezed; no marking on underside of rear
	often found in soil; feeds on decaying organic matter	
<b>ADULT BEETLE</b>	shiny black with white or metallic flecks <i>(above, left)</i>	dull matte black; female has reddish-black posterior tufts
	no horn	single, centered horn
	body up to 1" length	body up to 2¼" length
	feeds on flower pollen, nectar, fermenting sap, damaged fruit	feeds/sucks on sap, not foliage
<b>HABITS</b>	adult beetles active during the day (diurnal)	adult beetles active at night (nocturnal)

**FOR MORE INFORMATION:**

**Hawaii Department of Agriculture**

<http://hdoa.hawaii.gov/pi/main/crb/>

**Hawaii Invasive Species Council**

<http://dlnr.hawaii.gov/hisc/info/coconut-rhinoceros-beetle-response-updates/>

**USDA APHIS**

<http://www.hungrypests.com/>

# PALM PEST ALERT COCONUT RHINOCEROS BEETLE

*Oryctes rhinoceros*



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J.A. Zarders. 2014.

Website: <http://www.ctahr.hawaii.edu/haraa/index.asp>



progressive CRB damage to coconut palms

## COCONUT RHINOCEROS BEETLE FOUND IN HAWAI‘I

The coconut rhinoceros beetle was first detected on O‘ahu in December 2013 by a monitoring program conducted by the state and federal Departments of Agriculture and the University of Hawai‘i at Mānoa CTAHR. Beetles were breeding in coconut tree trimmings that had been piled as green waste mulch for weed control near a golf course located at Joint Base Pearl Harbor-Hickam.

This beetle has decimated coconuts and other palms as it spread from its native southern Asia to Guam, Fiji, Samoa, and the Pacific Islands of Palau. The adult beetle feeds on the sap of coconut leaves but will occasionally attack other palms and tropical plants. Immature stages (grubs) will feed on nearly any moist, rotting or composting organic matter from fallen logs, tree stumps, green waste, grass clippings and sawdust piles, to manure.



adult male

R Ito, USDA PPO

**We need your help to immediately report suspect damage and the possible presence of these beetles and their grubs in order to keep this pest from spreading and becoming established. Call HI Dept. of Agriculture Pest Hotline 643-PEST.**

Cover photo of adult female: HI Dept of Agriculture

## WHAT YOU CAN DO

**C**lear away piles of palm tree trimmings and other decomposing organic matter (bags of potting media, livestock manure, compost piles of grass clippings and other green waste) that may serve as breeding sites for the coconut rhinoceros beetle.



**R**eport suspect beetles, grubs and damaged trees to Hawaii Department of Agriculture's Pest Hotline 643-PEST (7378).



**B**e vigilant in monitoring your property and surrounding areas for unusual insects and/or damage to plants.

Inspect plants, building materials, and vehicles originating from known infested areas.



### DID YOU KNOW...

CRB grubs will burrow deep into soil or sand to evade suboptimal conditions, such as heat generated in compost piles.

### 3 ADULT BEETLE



HI Department of Agriculture

Adults live 4 to 9 months; female lays 50 to 140 eggs during its lifetime.

Adult beetles remain in pupal shells for 17 to 22 days to harden, then emerge and fly to palm crowns to feed.

### 2 PREPUPA / PUPA



Grubs enter non-feeding prepupal stage for 8 to 13 days usually in the soil or other organic matter; pupal stage follows for additional 17 to 28 days.

### 1 GRUBS



Grubs hatch in 8 to 12 days from white, oval eggs (<math>< \frac{1}{4}</math> inch long) laid in decomposing organic matter where they feed for 3 to 5 months.



#### References:

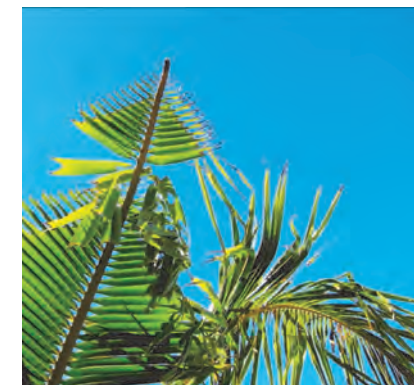
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 Bedford, G.O. 1980. Biology, ecology and control of palm rhinoceros beetles. *Ann. Rev. Entomol.* 25:309-339.  
 Woodruff, R. 2006. The Asian mango flower beetle, *Protaetia fusca* (Herbst), and *Euphoria sepulcralis* (Fabricius) in Florida and the West Indies (Coleoptera: Scarabaeidae: Cetoniinae). *Insecta Mundi* 20:227-231.

## LIFE CYCLE and DAMAGE

### ADULT BEETLES CAUSE DAMAGE



Beetles bore into tree crowns and growing tips with its legs (tarsi, circled below) that are lined with sharp, prickly spines, to feed on plant sap, not on foliage itself. Oval to round exit holes (above) are visible on leaf stalks (petioles).



Damaged leaves unfurl with **distinctive V-cuts** (above), **holes** in petioles and midribs (left), and browned, **circular serrations** (below), unlike damage caused by careless pruning.



Several beetles boring into the growing tip to feed on plant sap will eventually cause the tree to die, especially young palms (1-3 years). The dying stump then serves as a breeding site and larval habitat.