Diet of Invasive *Boa constrictor* in Puerto Rico

Alberto R. Puente-Rolón
Universidad Interamericana de Puerto Rico
Recinto de Arecibo

Robert Reed
US Geological Survey

Ricardo López
Departamento de Recursos Naturales y Ambientales

Biol Invasions
DOI 10.1007/s10530-012-0354-2

INVASION NOTE

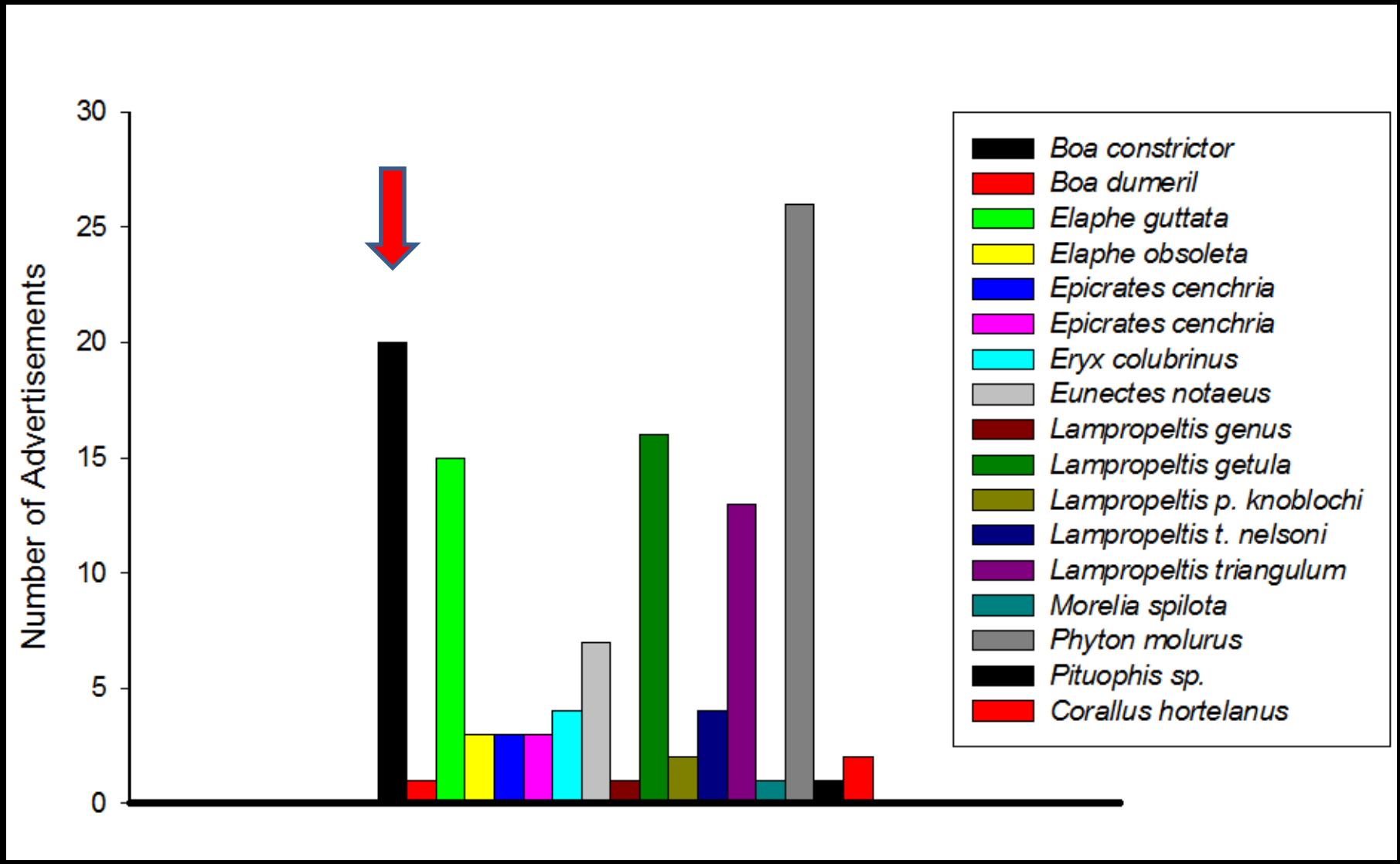
Genetic analysis of a novel invasion of Puerto Rico by an exotic constricting snake

R. Graham Reynolds · Alberto R. Puente-Rolón · Robert N. Reed · Liam J. Revell

In Puerto Rico:

Mayaguez, Hormigueros
Cabo Rojo, Añasco, Camuy
Toa Alta, Carolina, Arecibo
Aguada, San Germán, Guánica

2012 Illegal Snake Species Trade in Puerto Rico



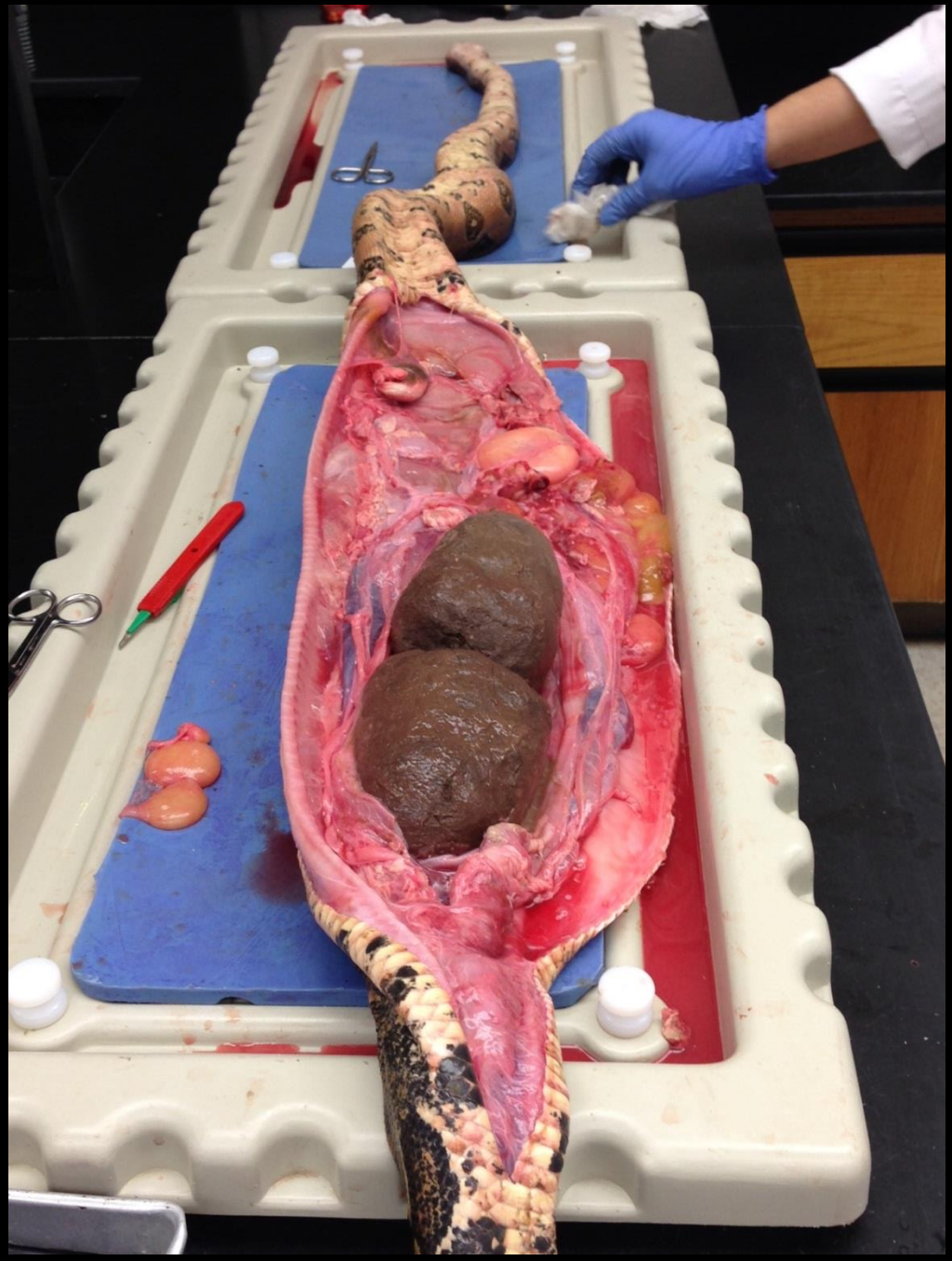
PROTEGER • CONSERVAR

CUERPO DE

DRNA

VIGILANTES

A total of 413 *B. constrictor* have been processed from June 2011 to Today



71% of the *B. constrictor* have feces or prey in the stomach, and 29% have empty stomachs

82%

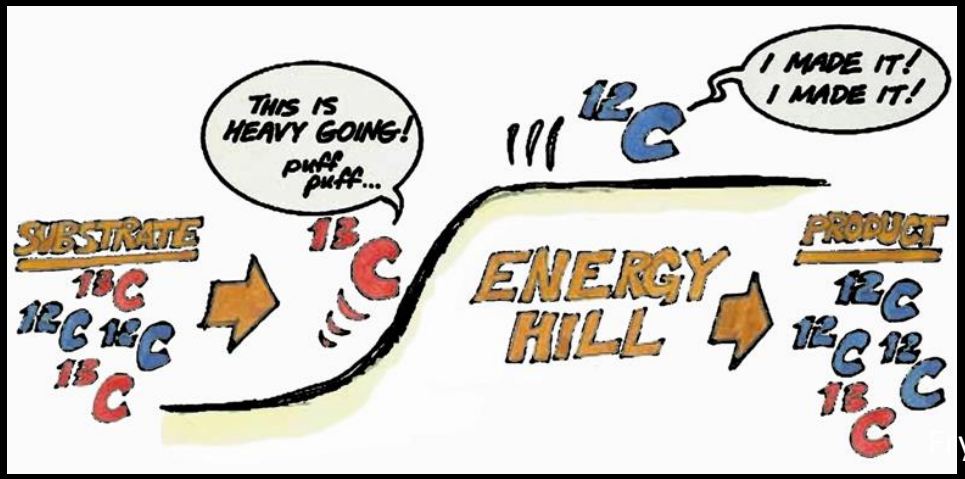
12%

4%

2%

Stable Isotope Analysis (SIA)

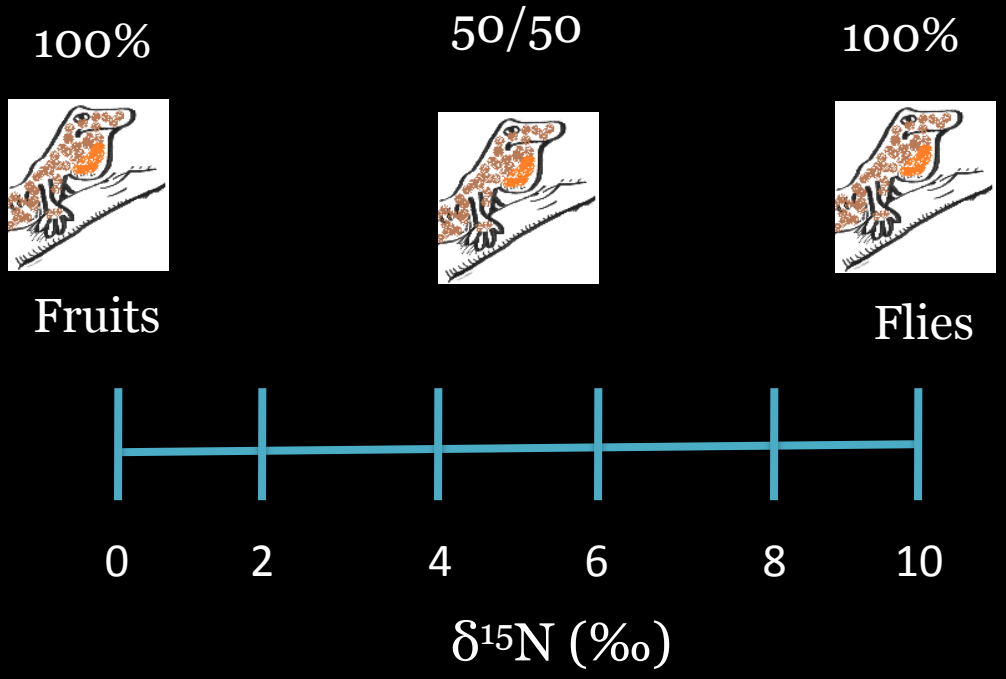
Analytical tool that allows track elemental cycling and energy flow from primary producers to consumers.



y 2008

- More *light* isotopes are used in chemical reactions within the body and therefore excreted as waste.
- More *heavy* isotopes become incorporated into muscle tissues, thus the isotope ratio of tissues becomes *heavier* than the food items.

Stable isotope analysis is based in the relationship between stable isotope ratios of organism and those of their diets, representing assimilation rather than ingested food.



“You are what you eat…”

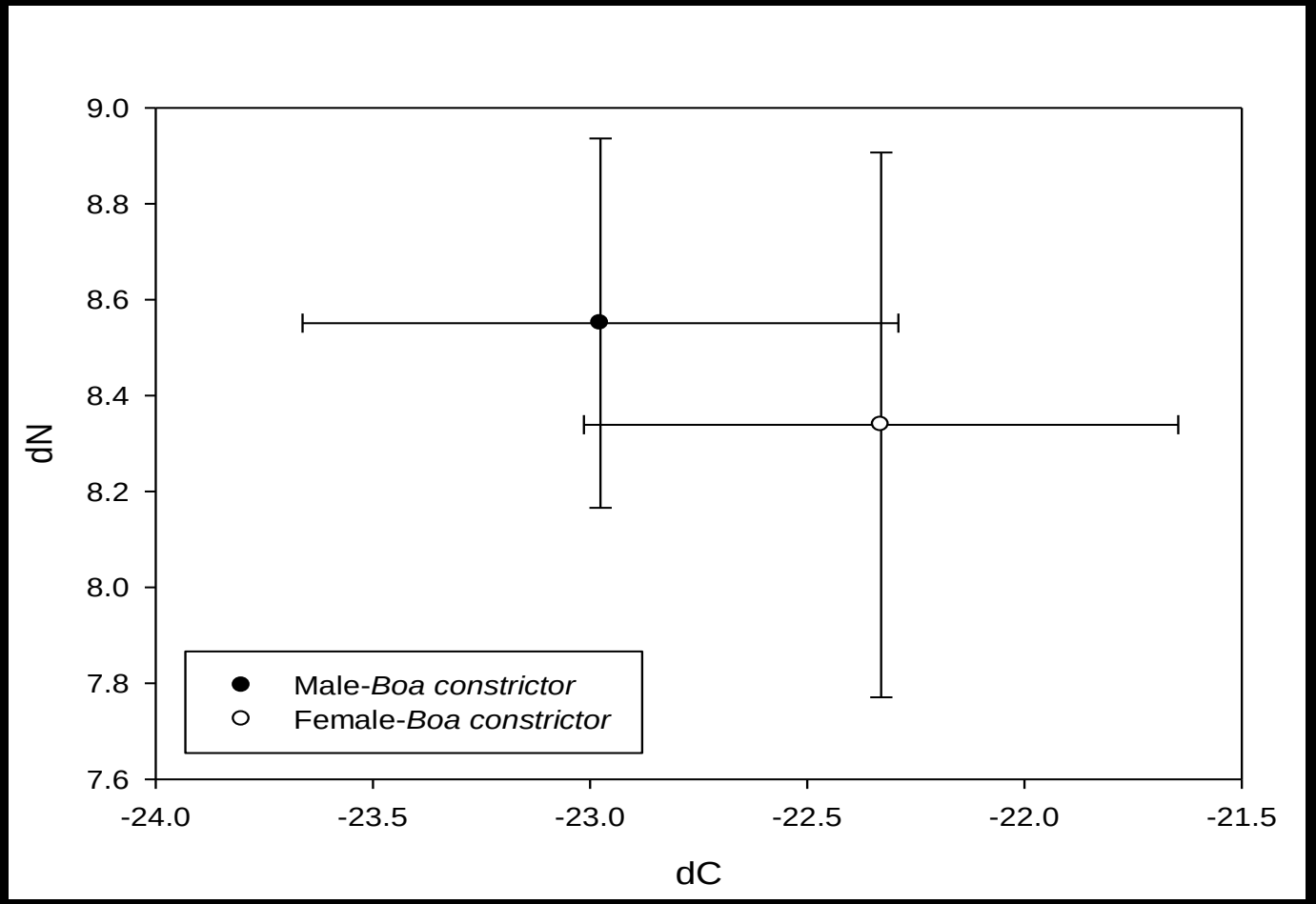
Egger and Jones 2000

- Isotopic abundance of carbon and nitrogen is expressed:

$$\delta = [(R_{SAMPLE}/R_{STANDARD})\text{-}1]*1000$$

- $\delta^{13}C$ is used to determine primary production sources in a trophic network
  - ^{13}C is enriched by ~1‰ per trophic level
- Consumer tissues are enriched in ^{15}N relative to their diet
  - ^{15}N is enriched by ~3‰ per trophic level

No difference in isotopic signal between males and females *B. constrictor*



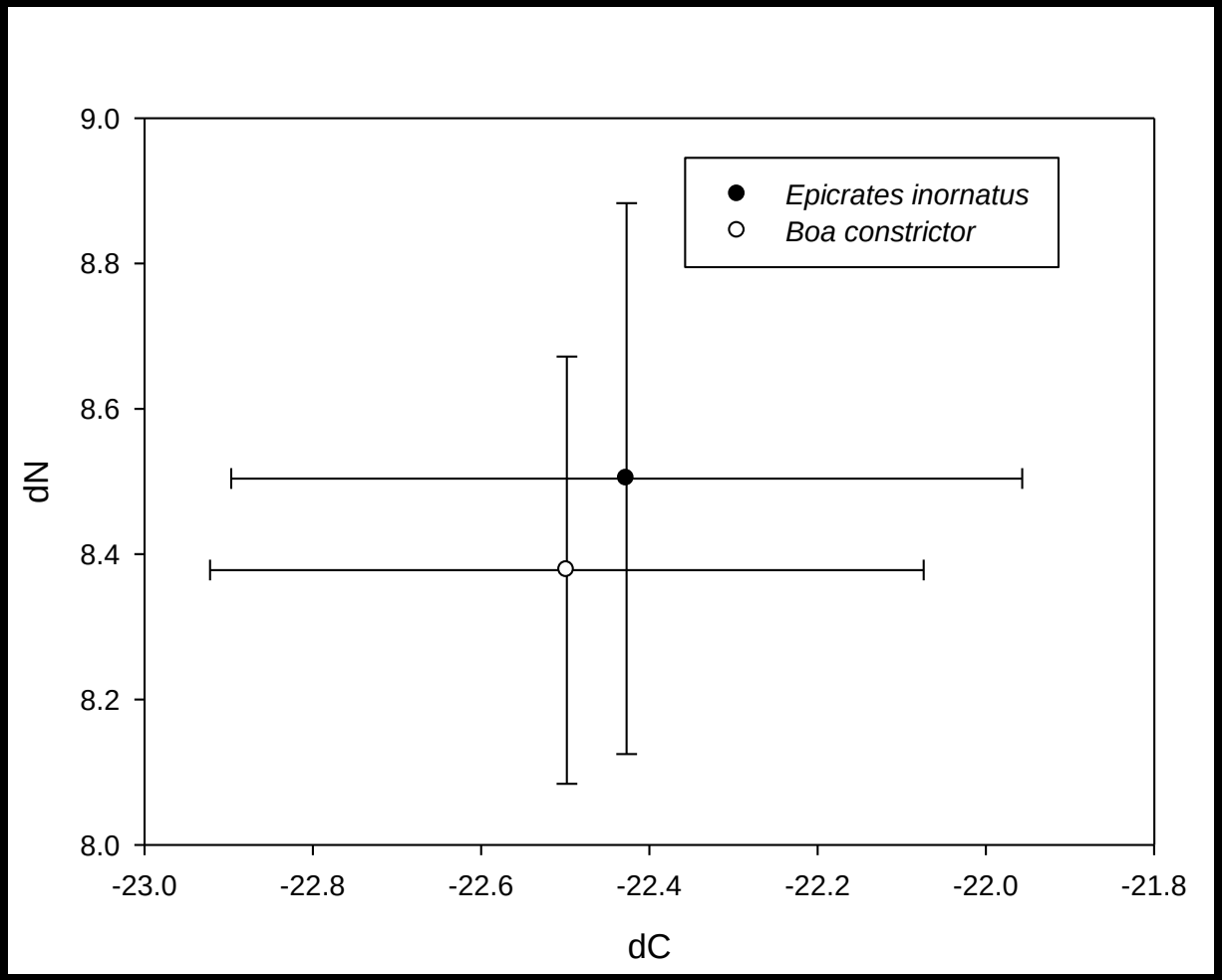
dC (t = -0.664, df=13, p= 0.518); dN (t = 0.299, df= 13, p = 0.770)

V.S.

Boa constrictor

Chilabothrus inornatus

No difference in isotopic signal between *C. inornatus* y *B. constrictor*



dC (t = 0.292, df= 23, p= 0.773); dN (t= 0.127, df=23, p = 0.900)

In conclusion:

B. constrictor is preying mostly on rats that constitutes the main prey item of the endangered *C. inornatus*.

Gracias

Recinto de Arecibo
UNIVERSIDAD INTERAMERICANA DE PUERTO RICO

CATEC
Center for Applied Tropical Ecology and Conservation

USGS
science for a changing world