

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

USDA National Wildlife Research Center - Staff
Publications

U.S. Department of Agriculture: Animal and
Plant Health Inspection Service

2009

Ctenosaura similis (Black Spiny-Tailed Iguana), *Gopherus Polyphemus* (Gopher Tortoise) Concurrent Burrow Use

Richard M. Engeman
USDA-APHIS-Wildlife Services, s_r100@yahoo.com

Bernice Constantin
USDA/WS

Missy Christie

Parker Hall
USDA/WS

Follow this and additional works at: https://digitalcommons.unl.edu/icwdm_usdanwrc



Part of the [Environmental Sciences Commons](#)

Engeman, Richard M.; Constantin, Bernice; Christie, Missy; and Hall, Parker, "*Ctenosaura similis* (Black Spiny-Tailed Iguana), *Gopherus Polyphemus* (Gopher Tortoise) Concurrent Burrow Use" (2009). *USDA National Wildlife Research Center - Staff Publications*. 898.
https://digitalcommons.unl.edu/icwdm_usdanwrc/898

This Article is brought to you for free and open access by the U.S. Department of Agriculture: Animal and Plant Health Inspection Service at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in USDA National Wildlife Research Center - Staff Publications by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

nología y Prototipos, Facultad de Estudios Superiores Iztácala, Universidad Nacional Autónoma de México, Apartado Postal 314, Avenida de los Barrios # 1, Los Reyes Iztacala, Tlalnepantla, Estado de México, México 54090 (e-mail: lemos@servidor.unam.mx); JAMES M. WALKER, Department of Biological Sciences, University of Arkansas, Fayetteville, Arkansas 72701, USA (e-mail: jmwalker@comp.uark.edu); and HOBART M. SMITH, Environmental, Population and Organismic Biology, and Museum, University of Colorado, Boulder, Colorado 80309, USA (e-mail: hsmith@spot.colorado.edu).

CTENOSAURA SIMILIS (Black Spiny-Tailed Iguana), **GOPHERUS POLYPHEMUS** (Gopher Tortoise). **CONCURRENT BURROW USE.** *Ctenosaura similis* is exotic to Florida (Meshaka et al. 2004. *The Exotic Amphibians and Reptiles of Florida*, Krieger Publ. Co., Malabar, Florida. 155 pp.), whereas *Gopherus polyphemus* is listed as a species of special concern by the state of Florida (Florida Wildlife Code Chap. 39 F.A.C.), and as a threatened species by the Florida Committee on Rare and Endangered Plants and Animals (FCREPA) (Moler 1992. *Rare and Endangered Biota of Florida: Volume III, Reptiles and Amphibians*. University Press of Florida, Gainesville, Florida. 291 pp.). Three *C. similis* were introduced to Gasparilla Island (Charlotte and Lee counties) ca. 30–35 years ago, where the species is now abundant (Krysko et al. 2003. *Florida Sci.* 66:141–146). Among the many concerns about the high density of ctenosaurs on Gasparilla Island are their impacts to threatened and endangered species (Krysko et al. 2003. *Florida Sci.* 66:141–146). *C. similis* is well-known to occupy *G. polyphemus* burrows, but apparently *G. polyphemus* cohabitation has not been observed following their occupation by ctenosaurs (McKercher 2001. Unpubl. M.Sc. thesis, Univ. Florida, Gainesville, Florida. 117 pp.). We report here observations of ctenosaur usage of active *G. polyphemus* burrows and the effects on *G. polyphemus*.

From 14–28 February 2008 we made a series of observations on Gasparilla Island, Florida at a 0.1-ha site of undeveloped habitat surrounded by a neighborhood of homes with manicured landscaping. Approximately 14 adult *G. polyphemus* resided in this small area, with a similar number of adult *C. similis*. As part of an invasive species removal effort, and to avoid impacting tortoises during the invasive species removal operations, observations on burrow usage were made on 12 days during the time span.

Ctenosaurs would actively move among the burrows (created by *G. polyphemus*), appearing to purposefully investigate other burrows holding other ctenosaurs. Ctenosaurs would readily enter burrows already occupied by a tortoise (or another ctenosaur). If a tortoise was situated at the burrow entrance, an iguana would not hesitate to scramble over or around the tortoise to enter the burrow, without causing the tortoise to exit. Typically, a tortoise would readily enter a burrow already holding a ctenosaur. However, we observed that a burrow which appeared to be regularly occupied by four ctenosaurs was not observed, either directly or from tracks, to be entered by a tortoise. Once 12 *C. similis* were removed from the site (and only one or two adult *C. similis* remained on the entire site), that burrow no longer was occupied by ctenosaurs and *G. polyphemus* resumed using it. Thus, some low level of burrow sharing appears to be tolerated by *G. polyphemus*, but they also seem to be repelled from burrows at some level of

C. similis activity.

Our observations relate only to the willingness to share burrows. Other potentially negative aspects of *C. similis* activity such as *G. polyphemus* nest destruction was not addressed. Examination of the stomach contents of *C. similis* removed from Gasparilla Island will be examined for *G. polyphemus* eggs and examination of *G. polyphemus* burrow aprons for *G. polyphemus* nests that were intentionally (e.g., predation) or accidentally (e.g., byproduct of ctenosaur nesting) disturbed or destroyed by *C. similis* will help identify other negative aspects of their activities.

Submitted by by RICHARD M. ENGEMAN, National Wildlife Research Center, 4101 LaPorte Ave., Fort Collins, Colorado 80521-2154, USA (e-mail: richard.m.engeman@aphis.usda.gov); BERNICE U. CONSTANTIN, USDA/Wildlife Services, 2820 East University Ave., Gainesville, Florida 32641, USA; MISSY L. CHRISTIE, Charlotte County Environmental & Extension Services, 25550 Harbor View Rd., Suite 2, Port Charlotte, Florida 33980-2503, USA; and PARKER T. HALL, USDA/Wildlife Services, 2820 East University Ave., Gainesville, Florida 32641, USA.

CTENOSAURA SIMILIS (Black Spiny-Tailed Iguana), **COLUBER CONSTRICTOR PRIAPUS** (Southern Black Racer). **NON-PREDATORY KILLING.** *Ctenosaura similis* is exotic to Florida (Meshaka et al. 2004. *The Exotic Amphibians and Reptiles of Florida*. Krieger Publ. Co., Malabar, Florida. 155 pp.). In particular, three individuals were released on Gasparilla Island (Charlotte and Lee counties) ca. 30–35 years ago, where they are now abundant (Krysko et al. 2003. *Florida Sci.* 66:141–146). This species may pose a threat to a number of endemic threatened and endangered species on Gasparilla Island such as eggs and young of nesting shorebirds, beach mice, hatchling sea turtles and Gopher Tortoises (*Gopherus polyphemus*) (Krysko et al., *op. cit.*). We report evidence that *C. similis* may also pose a threat to snakes.

On 10 November 2007, MK observed a ca 60 cm (total length) adult male *C. similis* attack a similarly long *Coluber constrictor priapus*. The iguana was basking on a rock at 1400 h on a warm (ca. 28°C) afternoon, when it attacked the racer as it approached within 2 m of the lizard's position. The ctenosaur rushed the snake and grabbed it in its mouth and shook it vigorously, much as dogs are prone to do. Once the snake was limp and appeared dead, the lizard dropped it and backed off 30–40 cm. When it noticed the snake's body twitching, it again rushed it and shook it, and again dropped it and backed off 30–40 cm. Further twitching of the snake's body resulted in another rush and even more vigorous shaking of the snake with the lizard backing off about 2 m this time, but additional twitching triggered another rush and shaking. Once the racer ceased to move, the iguana ignored it. The scene was observed for 20 min more to see if the ctenosaur would eat the racer, but it did not. The next morning its carcass was in the same spot.

We cannot clearly explain the ctenosaur's behavior towards the racer, but a defense mechanism towards snakes seems plausible. Janzen and Brodie (1995. *J. Herpetol.* 29:132–136) studied color cues in ctenosaur foraging by using different color patterns on snake replicas. They found brightly colored replica snakes (red, yellow, black) elicited the most attacks, but concluded the lizards