GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Norops sagrei***

Norops sagrei **System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Reptilia	Squamata	Polychrotidae

Common name Bahamian brown anole (English), Cuban brown anole (English), brown anole (English)

Synonym *Anolis sagrei* , (Cocteau in Dum&#65533;ril and Bibron, 1837)

Similar species *Anolis carolinensis*

Summary Norops sagrei (brown anole) can be identified by its extensible throat fan that is often coloured yellow or reddish-orange and has a white line down the centre of its back. Norops sagrei is a habitat generalist that prefers the open vegetation of disturbed sites. It is a ground dweller but will venture several feet up into trees and shrubs. Norops sagrei compete with Anolis carolinensis and other introduced congeners. Norops sagre also prey on the hatchlings of Anolis carolinensis.

view this species on IUCN Red List

Species Description
Norops sagrei (brown anole) is a “trunk ground ecomorph” sensu (Williams, 1983). It is described as having an extensible throat fan that can be yellow to red-orange. This species can be between 13 and 21.3cm. It also has enlarged toe pads and a short snout (Campbell, 2002). Brown anoles can erect a dorsonuchal crest when exposed to certain stimuli. The tail may have a crest-like ridge, but this is highly variable between individuals and should not be confused with the dorsonuchal crest. Also, the tail is laterally compressed. Females have a light line down the middle of their backs, but males do not. They tend to have a lighter mid-dorsal stripe that is distinct and often boldly patterned in females and often indistinct in males. Individuals change their colours and patterns throughout this range (Ann Paterson., pers. comm., 2005). Male colour is highly variable, ranging from light grey to nearly jet-black and plain coloured - to covered dorsally with irregular dark patches or chevrons and a network of light lines. Females exhibit a large range of colour, but nearly always have some type of obvious wavy dorsal pattern along the midline of their back (Enature.com Field Guide, undated).

Notes
Tokarz *et al.* (2001) state that, \"The dewlap of *N. sagrei* is a relatively large and often brighly coloured throat skin that can be extended and retracted in a variety of visual displays.\" The dewlap is considered to be a sexually dimorphic trait in anoles because males in most species have a larger dewlap than females. Moreover, there is evidence that the sexes differ in at least some neural and other morphological features that are involved in display of the dewlap. The sexes also differ in the social context in which the dewlap is used. Males in agonistic interactions extend their dewlaps more frequently than females and, unlike females, also display the dewlap during courtship. It has been proposed that the display of the dewlap by males may play an important role in species recognition, female mate choice, male-male competition, and even predator deterrence (West -Eberhard, 1983).

Uses
Wardle (2002) reports findings which show that on islands without *Norops* spp. there is a great magnitude of leaf damage to sea grape (*Coccoloba uvifera* L.) which is indicative of a lizard-induced trophic cascade.

Habitat Description
Norops sagrei (brown anole) is a ground dweller but will venture up several feet into trees and shrubs and prefers drier areas. Individuals occur primarily on the trunks of trees and on the ground (Rand and Williams, 1969). Campbell (2002) reports that the brown anole is a habitat generalist that generally prefers fairly open vegetation of disturbed sites.

Reproduction
Adult *Norops sagrei* (brown anoles) breed during the summer months (Lee *et al.* 1989; Tokarz *et al.* 1998). It is not clear when they establish territories. Although they become more conspicuous during the breeding season, there have been no empirical tests to determine their degree of territoriality during the non-breeding season. It is not clear whether they cease to defend territories at the end of the breeding season (Ann Paterson., pers. comm., 2005).

Nutrition
Campbell (2002) states that, \"Their native diet consists mainly of small arthropods, annelids, and molluscs.\"

General Impacts
The successful occupation of different types of habitats by *Norops sagrei* (brown anole) is attributed partly to its use of thermo-regulatory behaviours such as basking in solar radiation to select acceptable microclimates at different latitudes and altitudes (Rogowitz,1996). It is reported that brown anole when present, reduce the density and diversity of spiders upon which they feed (Wardle, 2002). Greene *et al*. (2002) state that, brown anole competes successfully with native green anole (see *Anolis carolinensis* in IUCN Red List of Threatened Species) and other introduced congeners. Campbell (2002) observes that without the brown anole, the native green anole occupies perches from ground to crown, but the presence of the brown anole causes the green anole to move higher, occupying trunks and crowns of trees. Brown anole demonstrate intra-guild predation (IGP), which is defined as killing and eating among potential competitors and have been reported to prey on the hatchlings of green anole. *N. sagrei* have also been observed consuming hatchling brown anoles, although this behaviour is not well understood and it is not known whether this behaviour is common (Nicholson *et al.* 2000).

Management Info
Campbell (2002) observes that, no control or eradication measures have been implemented for *Norops sagrei* (brown anole), in Florida (North America) where it has established. He further adds that this species would be very difficult if not impossible to completely eradicate due to its high density, high reproductive potential, and habitat generality.

Principal source: Campbell, 2002. The Brown Anole (*Anolis sagrei* Dumeril and Bibron 1837)

Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

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ALIEN RANGE

[1] BELIZE
[1] GRENADA
[1] JAMAICA
[1] SAINT LUCIA
[5] UNITED STATES
[3] CAYMAN ISLANDS
[1] GUAM
[1] MEXICO
[1] TAIWAN

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Summary: English:
The species list sheet for the Mexican information system on invasive species currently provides information related to Scientific names, family, group and common names, as well as habitat, status of invasion in Mexico, pathways of introduction and links to other specialised websites. Some of the higher risk species already have a direct link to the alert page. It is important to notice that these lists are constantly being updated, please refer to the main page (http://www.conabio.gob.mx/invasoras/index.php/Portada), under the section Novedades for information on updates.
Invasive species - reptiles is available from: http://www.conabio.gob.mx/invasoras/index.php/Especies_invasoras_-_Reptiles [Accessed 30 July 2008]
Spanish:
La lista de especies del Sistema de informaci€n sobre especies invasoras de m€xico cuenta actualmente con informaci€n aceca de nombre cient€fico, familia, grupo y nombre com€n, as€ como h€bitat, estado de la invasi€n en M€xico, rutas de introducci€n y ligas a otros sitios especializados. Algunas de las especies de mayor riesgo ya tienen una liga directa a la p€gina de alertas. Es importante resaltar que estas listas se encuentran en constante proceso de actualizaci€n, por favor consulte la portada (http://www.conabio.gob.mx/invasoras/index.php/Portada), en la secci€n novedades, para conocer los cambios.
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