GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Osteopilus septentrionalis***

Osteopilus septentrionalis **System:** Freshwater_terrestrial

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Amphibia	Anura	Hylidae

Common name rana cubana (English), rana platernera (Spanish), Giant Tree-frog (English), Marbled Tree-toad (English), Cuban Treefrog (English)

Synonym
Trachycephalus insulsus , Cope, 1864
Trachycephalus wrightii , Cope, 1864
Hyla schebestana , Werner, 1917
Hyla microterodisca , Werner, 1921
Trachycephalus marmoratus , Dum&#65533;ril & Bibron, 1841
Osteopilus septentrionalis , Dum&#65533;ril & Bibron, 1841
Hyla lesueurii , Bory de Saint-Vincent, 1828
Hyla sueurri , Bory de Saint-Vincent, 1831
Dendrohyas septentrionalis , Tschudi, 1838
Trachycephalus septentrionanlis , Barbour, 1904
Hyla dominicensis septentrionalis , Mertens, 1939
Hyla insulsa , Mittleman, 1950
Hyla dominicensis insulsa , Mittleman, 1950

Similar species

Summary The Cuban treefrog, Osteopilus septentrionalis is a voracious, nocturnal predator that eats any prey that it can grab, including members of its own species, other frogs, lizards, insects, spiders, and small snakes. It is an arboreal species, but it can also survive in moist areas. It is an excellent climber and is variable in color. This species is a threat to native species primarily through predation and competition. The Cuban treefrog is easily distinguishable from other frogs by its comparably large size and warty skin. This species is very successful in colonizing and has a long life span, which can make it a very significant problem in regions where it is introduced.

view this species on IUCN Red List

Notes
Recent increases in shipping and trade, as well as increasing human populations and demands for non-regional produce and landscaping and building materials have enabled the dispersal and invasion of the Cuban treefrog (Platenberg, 2007). The Cuban treefrog is a storm-adapted species that can immediately increase its fecundity and rapidly disperse during and after hurricanes (Somma, 2008). High fecundity, a short larval period, broad diet, open habitat, and dietary niches make this species a successful widespread anuran population in situations that seem less than ideal for supporting it (Townsend, Eaton, Powell *et al*, 2000).

Lifecycle Stages
Eggs are around 3 mm when they hatch into tadpoles. Tadpoles typically emerge between 1 and 2 days after the eggs are laid (GSMFC, 2007). At about 20 hours after hatching, tadpoles are around 2 mm from snout to vent with a tail length of about 4 mm. They reach a size of 26-32 mm at metamorphosis, which occurs usually 30-60 days after hatching. The Cuban treefrog is a long-lived species with a lifespan of approximately 5-10 years (Masterson, 2007). Males tend to exhibit lower survival than females, which means that females have more time to grow than males. Males in some populations tend to live in a mature stage up to 3 months, whereas mature females can live more than 2 years. Due to the fact that there is a positive relationship between the snout, vent length and the number of eggs that are laid, research indicates that females mature more slowly than males, and they skip breeding events. However, there is no difference in the growth rates of male and female juveniles (Salinas, 2006a).

Uses
The Cuban treefrog has been used in the form of a pet as well as a display animal and in international horticulture. In fact, it has been reported that a large percentage of this species has been a part of captive breeding/farming at some point (Hedges *et al*, 2008).

Habitat Description
Osteopilus septentrionalis occurs from sea level up to 1,110m asl. Cuban treefrogs live in mesic habitats but may also be found in xeric habitats. This species can tolerate brackish water, which includes pools, marshes, flood pastures, and ditches (Hedges *et al*, 2008). Terrestrial habitats include forest-hardwood, mixed, suburban/orchard as well as woodland of conifers or mixed. Daytime retreats include surface objects, hollow logs, burrows, high corners of beams of rooms, and nests of birds to name a few. Larvae are aquatic (NatureServe, 2008). In addition, *O. septentrionalis* can easily coexist among humans. In fact, this species can be many times more numerous in urban habitats than any of its natural habitats (Meshaka, 1996a). The Cuban treefrog has been encountered in mangrove scrub and mangrove in addition to disturbed areas (Rice, Waddle, Crockett *et al*, 2007). *O. septentrionalis* is well known for exploiting man-made structures and water supplies, which results in the successful colonization of certain areas (Townsend, Eaton, Powell *et al*, 2000). This species has also occurred in agricultural settings such as orange groves and plant nurseries. It may also be found in small trees and shrubs, being an arboreal animal, and has even been found buried several inches below dry soil (Johnson, 2007).

Reproduction
Osteopilus septentrionalis reproduces at night and is largely stimulated by rainfall, especially warm summer rains (Johnson, 2007). Males have horny nuptial excrescenses on their thumbs and a medial internal subgular vocal sac with posterolateral extensions (GSMFC, 2007). The vocal sac, which is located under the chin and when inflated has the appearance of a double sac, is used to make breeding calls. The fairly distinct calls of the male Cuban treefrog sounds like a squeaking door or a \"snoring rasp\" (Johnson, 2007). Males call from leaves, branches, limbs and stems of saplings (NatureServe, 2008). Breeding is non-assortive by the snout, vent length. However, males may increase their reproductive success by starting to breed with small snout, vent length females and by participating in all possible breeding events, and they apparently start to breed at a younger age than females (Salinas, 2006a). Males do not exhibit any parental care nor do they defend territories. Unpaired males often clasp males in amplexus or place themselves alongside other mated pairs (Salinas, 2006b). Females lay approximately 130 eggs, which are deposited in lakes, pools, cisterns, etc (GSMFC, 2007). However, the number of eggs deposited by the female is related to her size. A very large female may lay an excess of 15,000 eggs in one season (Johnson, 2007). The Cuban treefrog is capable of using pools of relatively high salinity for reproduction. Eggs form a thin floating sheet at the surface (GSMFC, 2007). Breeding events typically last only one night (Salinas, 2006b).

Nutrition
The Cuban treefrog is a \"sit and wait\" predator that feeds at night (Johnson, 2007). This species is a voracious predator that preys on any small animal that it can catch, especially insects, spiders, and other small frogs (GSMFC, 2007). This species is also known to eat lizards and small snakes (Johnson, 2007). Research concluded that there is no apparent trend in the size or hardness when looking at the composition of the diet or individual prey items present in the diet of the Cuban treefrog (Owen, 2005).

General Impacts
The Cuban treefrog has sticky skin secretions that can be extremely irritating to the mucous membranes of people. The secretions can cause a burning and itching sensation that can sometimes last for more than an hour. It can also be a nuisance to people because of its many abundant hiding places, consistent food sources, and adequate breeding sites that are many times provided by human dominated landscapes where populations may become quite dense. The standard of living may be lowered in areas where the Cuban treefrog prospers. For example, this species has been found in toilet bowls and has clogged drains. The mating calls of male Cuban treefrogs can be an annoyance as well (Johnson, 2007). The Cuban treefrog may also be a vector of pathogens (Hedges *et al*, 2008). Studies suggest that this species has the potential to inflict substantial monetary and ecological damage on the habitat that it invades (Owen, 2005). Adults are predators to native animals in areas of invasion, but larvae can also be threatening. Cuban treefrogs as tadpoles will prey on heterospecific anuran larvae, which may reduce the survivorship of these heterospecific tadpoles (Smith, 2005a).

Management Info
Preventative measures: Early detection and rapid response are very important for a rapid and successful eradication of this species in introduced areas (Campbell, 2008).
Biological: Some species of aquatic and terrestrial species of snake are predators of the Cuban treefrog (GSMFC, 2007).
Integrated management: Effectively screening cisterns and regulating water distribution will negatively impact established populations of Cuban treefrog (Townsend, Eaton, Powell, *et al*, 2000).
Chemical: Monitoring and fumigating imported plants should impair further dispersal of the species (Townsend, Eaton, Powell *et al* 2000).

Pathway
Recent increases in shipping, along with increasing human populations and demands for non-regional produce and landscaping building materials have enabled the dispersal of opportunisitc invaders such as the Cuban treefrog (Platenberg, 2007).This species has been used as pets and display animals (Hedges *et al*, 2008).

Principal source:

Compiler: National Biological Information Infrastructure (NBII), Comité français de l'UICN (IUCN French Committee) & IUCN SSC Invasive Species Specialist Group (ISSG)

Review:

Pubblication date: 2008-03-14

ALIEN RANGE

[1] ANGUILLA
[2] ANTIGUA AND BARBUDA
[3] BES ISLANDS (BONAIRE, SINT EUSTATIUS AND SABA)
[1] CANADA
[1] COLOMBIA
[2] COSTA RICA
[1] CURACAO
[1] DOMINICA
[1] GRENADA
[1] GUADELOUPE

[1] JAMAICA
[1] PANAMA
[1] PUERTO RICO
[1] SAINT KITTS AND NEVIS
[2] SAINT MARTIN (FRENCH PART)
[10] UNITED STATES
[4] VIRGIN ISLANDS, U.S.
[1] MEXICO
[1] PERU
[1] SAINT BARTHELEMY
[1] SAINT LUCIA
[1] TURKS AND CAICOS ISLANDS
[4] VIRGIN ISLANDS, BRITISH

Red List assessed species 6: NT = 1; LC = 5;

Anaxyrus terrestris **LC**
Dryophytes squirellus **LC**
Leptodactylus albilabris **LC**
Dryophytes cinereus **LC**
Eleutherodactylus martinicensis **NT**
Thamnophis sirtalis **LC**

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