

## Marine Toads (*Bufo marinus*)<sup>1</sup>

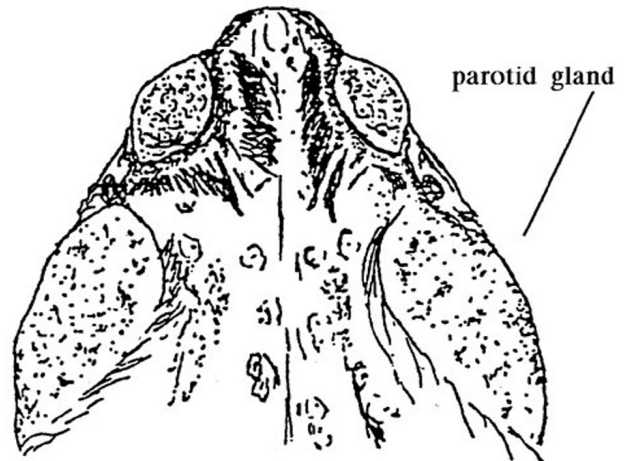
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### Description

The marine toad is a brown to grayish-brown toad with a creamy yellow belly and deeply-pitted parotid glands extending down the sides (see Figure 1). These glands contain a milky-white substance commonly called "bufotoxin," which the toad uses as a defense against predators. This toxin (poison) can cause irritation in humans and animals, particularly when the toxin comes in contact with the eyes or mucus membranes. For small pets and wild animals, this toxin can be lethal. See the section below called "How to Help Your Pet" for more information about the toxin.

Adult Marine toads generally range in size from 6 to 9in (15 to 23cm), but may get larger. The call, which is heard from early spring through the summer, sounds like a tractor that is far away. To hear the call, go to our Web site at [http://www.wec.ufl.edu/extension/wildlife\\_info/frogstoads/](http://www.wec.ufl.edu/extension/wildlife_info/frogstoads/) (using Internet Explorer only, sorry), and click on "Giant, or Marine, toad." There will be a link to the call with the description and photo of species.



**Figure 1.** The toxin secreted from the parotid gland of the marine toad can cause irritation of eyes and mucus membranes in humans and animals.

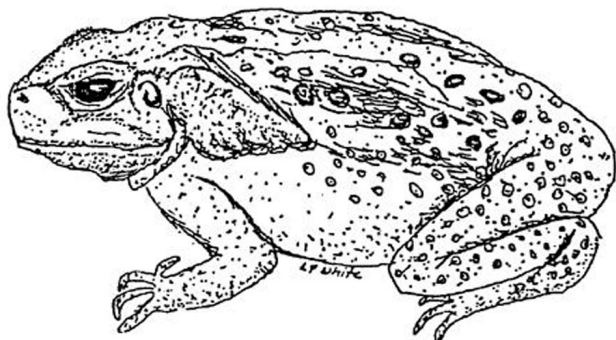
### Range

The natural range of the Marine toad extends from south Texas and south Sonora (Mexico) through the Amazon basin in South America. However, populations now occur throughout the Caribbean and Florida, as they were introduced in many areas to control agricultural pests in sugar cane. These toads now occur in urban areas of south and central Florida (Figure 2), and are rapidly expanding northward. The

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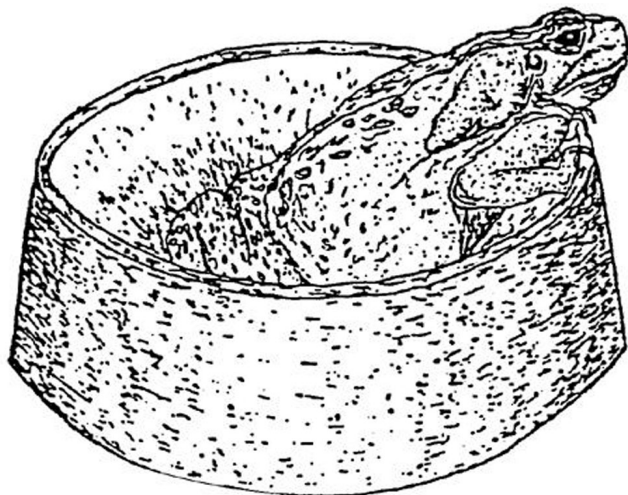
highest concentrations are found in the southeastern coastal region, in a small area on the southwest coast (mainly Lee and Glades counties), and a small area near Tampa (Pinellas County and nearby areas). However, this species continues to expand its range, so it could be found elsewhere in the state.



**Figure 2.** Marine toads are found in both urban and rural areas of south and central Florida.

### Habitat and Food

Marine toads are found mainly in disturbed areas, such as around buildings and in yards, and near canals and ponds. They are omnivorous, eating just about anything including insects (beetles, ants, and earwigs), vegetation, small birds, other toads and frogs, lizards, small mammals, snakes, table scraps, and dog and cat food (Figure 3).



**Figure 3.** Marine toads are attracted to pet food in open dishes in the yard.

### Reproduction

Marine toads are most noticeable in the spring (usually late March), after rains when they begin calling for mates. They breed from April to September with the female laying two strings of eggs on the surface of the water or wrapped around vegetation or other objects in the water. The eggs hatch in about 3 days into small black tadpoles. The tadpoles metamorphose into small toads in 45 to 50 days.

Note: We have received reports from people who have koi ponds that the eggs (and possibly the tadpoles) of Marine toads appear to be toxic to koi fish. In several cases, koi have died in a small pond within 24 hours after a Marine toad laid its eggs in that pond. It was unclear if the fish had eaten the eggs or if simply the presence of the eggs was toxic to the koi. This is a cautionary note based strictly on anecdotal evidence, not scientific experimental evidence.

### Damage and Control

Marine toads do not cause damage to property; however, their defensive secretion (toxin) is highly toxic to dogs, cats, and other animals, and can cause skin and eye irritation in humans. To avoid attracting marine toads, do not leave pet food in open dishes in the yard (Figure 3).

These toads are a non-native species and therefore are not protected. They can be removed and disposed of (euthanized) humanely (as recommended by the IFAS Animal Use Approval Committee).

Here is a humane method of euthanasia for amphibians (recommended by a veterinarian): Purchase a small tube of benzocaine ointment (used as a pain-killer for toothaches and teething). There are several well-advertised brands as well as much less expensive store brands (generic brands). Simply take a strip of ointment about 1 inch long (more for very large toads) and spread it down the midline of the neck and back of the toad. In 5-10 minutes the toad will be groggy; in 15-20 minutes it should be unconscious, and in about 30-40 minutes it will be close to dead or dead. At this point, put the frog in a plastic container or plastic bag and freeze it for 3

days. Why? Because we want to *ensure* that the toad dies humanely -- we don't want a heavily drugged toad to be buried and later wake up 2 feet underground. So, after 3 days, dispose of the toad carcass by either burying it deep enough so that a pet or wild animal will not dig it up, or by placing it in a plastic bag and putting it in the trash.

Freezing is a humane way to kill toads and frogs because their bodies go into a state of torpor (metabolism slows down) -- just as they do in cold weather outside. If the cold weather is short in duration, the toads will come out of their torpor state. However, after an extended time in freezing temperatures, the toads die.

For any toad smaller than your fist, just make sure you've identified it correctly before euthanizing it. The similar native species, Southern toad (*Bufo terrestris*), looks a lot like Marine toad but is actually harmless to pets and wildlife (details below about telling the two species apart).

If you do not wish to handle the toads yourself, contact a local nuisance animal trapper.

It is tough to get rid of Marine toads once they are in the area. Most importantly, be sure there is no pet food left outside in the area (they will eat dog and cat food and are attracted to pet food bowls). To exclude toads from part, or all, of your yard, try installing short fencing. The fencing should be at least 2 feet high *and* be buried at least 1 foot down in the ground (add, or bend, a lip on the bottom of the fence so it is harder for toads to burrow under it). This can be effective, but is not guaranteed!

### Marine toad vs. Southern toad: How to tell the difference

If you see a toad that you suspect might be a Marine toad, keep in mind that it could also be a Southern toad, which is native to Florida and is harmless to pets (they just taste bad, but are not poisonous). Take a look at photos and information about these two species at our Web site called "Frogs and Toads of Florida" at <http://www.wec.ufl.edu/extension/frogs/default.htm>. In addition, here are some specific tips for telling the difference between these two toad species.

### Comparing the Marine toad to the Southern toad

The most obvious difference is in **ADULT size** (in length of body, not counting legs).

- Adult Giant toads can be bigger than your fist (6-9 inches), much larger than any toad or frog that is native to Florida.
- Adult Southern toads grow to a maximum of about 3.6 inches. So, once a toad is larger than 4 inches, it is safe to assume it is a Giant toad.

#### Other differences:

- The Marine toad has large bumps on each side of neck (parotid glands) that *angle downward onto the shoulders*. The Marine toad *lacks* ridges or knobs on the head.
- By comparison, the Southern toad has smaller parotid glands that are *positioned parallel to, and close to, the spine*. Also, the Southern toad has two short ridges ("cranial crests") that start between the eyes and often end in bulbous knobs. These ridges are also parallel to the spine.

#### Other *Bufo* species in Florida:

There are two other species of toads in Florida that are in the *Bufo* genus: Fowler's toad (*Bufo fowleri*) and Oak toad (*Bufo quercicus*). Both are native to Florida and are harmless to pets and wild animals. For pictures and information about frogs and toads in Florida, visit our Web site at <http://www.wec.ufl.edu/extension/frogs/default.htm>.

### How to Help Your Pet if Exposed to Marine Toad Toxin

FIRST, remember that *all native toads* have glands on their skin that contain MILD toxins that just taste nasty to a predator or make a predator a little sick after they try to eat a toad. The strategy for the *mild* toxin is to "educate" (not kill) the predator, so it will be discouraged from trying to eat a toad again. This mild toxin usually causes excessive salivation (foaming at mouth or drooling), but that is the extent of it. It is not poisonous. However, you can still

follow the directions below for rinsing your pet's mouth -- just to be on the safe side.

So, why is the non-native *Marine toad's* toxin so dangerous? The Marine toad is NOT NATIVE to Florida and the wild animals here are not adapted to its toxin, that's why the toxin can be lethal to small animals and pets.

Dr. David Stelling, a veterinarian who has practiced in Miami for more than 15 years, said toad poisoning is a common problem for dogs, particularly terriers.

"By nature, terriers are inclined to attack smaller animals," Stelling said. "But any dog may become territorial and bite a toad. Marine toads will climb into outdoor food bowls to eat leftovers, and this leads to biting incidents."

**Symptoms of toad poisoning** (in dogs) include drooling, head-shaking, crying, loss of coordination, and, in more serious cases, convulsions. The dog's gums often turn red (an indicator veterinarians use to distinguish toad-poisoning from epilepsy). *Dog owners should be familiar with normal color of their dog's gums.*

If you suspect toad poisoning, get a hose and run water in the side of the dog's mouth, pointing the animal's head downward so water isn't swallowed. Rub the gums and mouth to remove the toxin, and call your vet immediately. Treatment is usually successful. Stelling says he's only seen a few fatalities, and they were very small dogs.