

# Argentine Horned Frog/Pacman Frog

By Catherine Love, DVM

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## Natural History

Pacman frogs, also known as South American horned frogs, ornate horned frogs, and Argentine horned frogs, are a group of species in the *Ceratophrys* family. *C. ornata* is the most common species, the true Argentine horned frog, but the term “horned frog” or “Pacman frog” may be used to describe other species in this group. The Surinam horned frog (*C. cornuta*) and Cranwell’s horned frog (*C. cranwelli*) are other commonly kept species in this genus. Pacman frogs are native to the moist forest floors of South America and spend much of their time in damp leaf litter. These frogs are considered “near threatened” by the IUCN.

## Characteristics and Behavior

Pacman frogs are sometimes described as a “giant mouth with a frog attached”. Thanks to captive breeding efforts, they come in a variety of color morphs and hybrids that make them desirable in the pet trade. They are ambush predators that tend to spend a lot of time buried or partially buried in substrate, waiting for prey. These species tend to be fairly hardy, and tolerate some handling, so they are considered good beginner amphibians. However, like all amphibians, Pacman frogs are sensitive to the oils in our skin and may be stressed by too much handling. It is best to avoid excessive handling and wear gloves if the frog needs to be handled. Vinyl gloves are best, as latex sensitivities have been reported in amphibians.

## Lifespan

Up to 15 years.

## Adult Size

4-7 inches, with females larger than males.

## Housing

Like other frogs, the juvenile forms of these species are fully aquatic and have different care requirements than adults. This guide will only cover metamorphosed frogs. Pacman frogs are voracious eaters and should be housed alone, as they may eat cagemates. A 20 gallon enclosure is the minimum size for an adult frog. They tend not to be particularly active animals, but they do enjoy burrowing so it is ideal to provide

more space for substrate. Cover such as plants (live or fake), cork wood, logs, leaf litter, rocks, and other clutter should be provided to help the frog feel more secure and to provide enrichment. They are terrestrial, and may not make use of tall branches or deep pools of water. For substrate, Eco Earth, Zilla Jungle Mix, or ReptiSoil are all acceptable options. A layer of sphagnum moss can also be added on top if desired, and leaf litter is recommended to replicate their natural environment. There should be enough substrate for the frog to fully burrow beneath the surface, about 4-6 inches at minimum.

## Lighting

It is unclear if Pacman frogs benefit from UV lighting. Other amphibians and reptiles require UV to synthesize vitamin D3 in their skin. Vitamin D3 is needed for calcium absorption and prevention of metabolic bone disease. There is evidence that other amphibians suffer from poor calcium absorption and metabolic bone disease from a lack of UV light. It may be beneficial to provide low levels of UV light, as long as there are options for the animal to escape from light. The Arcadia T5 7% ShadeDweller or Arcadia T5 6% Forest can be used to provide a maximum UVI of 1-2. If UV is being provided, it is important to turn this light off at night and ensure that there are plenty of plants and other hides available for the frog to choose to get away from the light. The lamp should cover approximately  $\frac{1}{3}$  of the animal's enclosure. It is good practice to mimic the natural photoperiod that is occurring, either manually or with timers. UV bulbs need to be replaced every 6 months. Even if they are still giving off light, they may not be giving off sufficient UV.

## Heat

Many keepers disagree on the best way to heat Pacman frogs. There is a concern that overhead heating may dry them out, so heat mats are often recommended. However, in the wild, Pacman frogs burrow to cool down, so providing heat below the cage is not ideal or natural. Instead, overhead heating with deep substrate is preferred to keep the habitat from drying out. There is some variability in the temperature ranges of each species, but the ranges for individual species may not be known so all Pacman frogs tend to be lumped together. A warm ambient of 78-85F can keep Pacman frogs comfortable during the day. It is important that heating units do not cover the entire enclosure, as reptiles and amphibians need a gradient to allow themselves to thermoregulate. The cool side can drop to the low-mid 70s. At night, heat sources should be turned off and temperatures can drop as low as 65F. These temperatures should be measured with a digital thermometer, as analog thermometers are often inaccurate.

There are many different kinds of overhead lighting available. Sunlight is made of UV, near infrared (IR), mid IR, far IR, and visible light. Flood tungsten-halogen bulbs are the most efficient at producing near IR, which is the most abundant IR in sunlight, and they also produce significant mid IR and some far IR. Far IR is the least abundant in sunlight, but is most often produced in large amounts by sources like ceramic heat emitters, heat pads, and radiant heat panels. Tungsten-halogen bulbs should be the flood type to ensure a wide enough basking site. These heat producing bulbs can be found as reptile specific bulbs or at hardware stores. Avoid hot rocks as these can easily burn reptiles. A thermostat can be used to keep the bulb at the temperature it should be.

## Humidity

Pacman frogs are a tropical species and need high humidity in their environment. Ambient humidity should be maintained around 60%. If a screen top enclosure is being used, covering part of the screen with foil tape or a damp towel can help maintain humidity, but this will reduce ventilation. Poor ventilation can lead to respiratory disease and mold build up. Spikes up to 70-90% should also be provided by occasional heavy misting or automatic misters/foggers, particularly at night. Substrate should be kept moist but not soaking wet. Burrowing allows Pacman frogs to enter a humid microclimate to help maintain hydration. Ambient humidity should be measured with a digital hygrometer, and a hygrometer with a probe can measure the humidity in a frog's burrow. The burrow should be higher humidity than the ambient air. It is natural for humidity in the frog's wild habitat to drop to moderate levels during the day and increase at night. Deep substrate and live plants can also help maintain humidity.

## Feeding

Wild Pacman frogs are voracious eaters that will consume just about anything that can fit in their mouths. Their diets consist of a variety of vertebrate and invertebrate prey, with some research showing primarily other frogs and toads in their digestive tract. In captivity, dietary variety is important for providing enrichment and preventing nutritional deficiencies. Acceptable protein sources include crickets, dubia roaches, earthworms, phoenix worms, hornworms, silkworms, and the occasional mealworm or waxworm. Pinky mice and baby quail can be provided as an occasional treat, but no more than 1-2x/month as these are high in fat. ReptiLinks are also a good supplement for Pacman frogs, as they come in various proteins including bullfrog and iguana, which may replicate their consumption of reptiles and other amphibians in the wild. Many frogs learn to take food from tongs, so canned snails, grasshoppers, or Pacman pelleted food can be provided as well to increase dietary variety.

Insects are naturally deficient in calcium and low in nutritional value. In order to make them nutritious for reptiles and amphibians, all insects should be gutloaded (fed a highly nutritious meal 24-48 hours before feeding) and dusted with calcium. Repashy BugBurger or Arcadia InsectFuel are good choices for feeding feeder insects. Calcium powders should be calcium carbonate based and should not have any phosphorus. If you are not providing UVB, calcium powders should contain D3. Arcadia, Repashy, and ZooMed all have good products. Follow your brand's recommendations to avoid overdosing. Food should be dusted with a multivitamin including vitamin A 1x/week.

Growing frogs should be fed daily, whereas full grown frogs (approximately 1-1.5 years of age) should be fed every 2-3 days. There isn't a set guide for how often to feed your frog. Most keepers choose to feed based on body condition. Pacman frogs should be round, but not rotund. They should look like a frog, not a balloon ready to pop. Obesity is common in these frogs and can lead to fatty liver disease and decreased lifespan.

## Water

A shallow dish of clean water large enough for the frog to soak in should always be provided. It is recommended to use a reptile safe dechlorinator prior to placing water in the enclosure.

## Sexing

Females tend to be significantly larger than males. Males also tend to have darker throats and will develop structures on their toes called nuptial pads. Male frogs will call during the breeding season.

## Zoonosis

Always wash your hands after handling your frog, their food, or anything in their enclosure. If you must handle your frog, vinyl gloves are recommended.

## Health

Pacman frogs are generally quite hardy but may be prone to obesity, nutritional-secondary hyperparathyroidism (metabolic bone disease), red-leg (bacterial disease), and fungal disease. Chytridiomycosis is a fungal disease of high concern, as it is responsible for the death of amphibian species worldwide. Signs of chytrid include red or discolored skin, abnormal or excessive shedding, and behavior changes. Amphibians are voracious eaters so loss of appetite should be considered a red flag.

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