
Whatever Happened to the Horny Toads?

by: Lynne Hoss

THRIVING IN THE WILD

The last horny toads I saw were in my yard in 1987. The babies were the size of a quarter and there was a 4” long adult. I haven’t seen one since. Other Foothills residents also note that once plentiful horny toads now seem to be gone, leading to the question, “Whatever happened to the horny toads?”

The horny toad is not really a toad at all, but rather a horned lizard. This makes it a reptile, not an amphibian. Its genus name *Phrynosoma* means ‘toad bodied’ referring to a toad-like appearance with a broad body and lumpy skin. Resembling a miniature dragon and distantly related to



© 1978 Paul Berquist/ ASDM Sonoran Desert Digital Library

tyrannosaurus, the horned lizard is easily identified by the thick, sharp spines along head, sides and tail. Their dragon-like appearance was magnified in the 1960’s film *The Lost World* in which they were portrayed as prehistoric horned dinosaurs!

The horned lizard is found in all western states and Mexico, from 9,500 feet altitude to sea level, with varying habitat. Six of the seven U.S. species can be found in Arizona, with three of these living on the Sonoran Desert, including the Desert, Regal and Flat-tailed horned lizards. The local species is the Regal horned lizard (*Phrynosoma solare*), the largest in Arizona. Its range extends through central and south Arizona, down to Sinaloa, Mexico, in sandy, gravelly and rocky habitat . It is 3.5” to 6.5” long, has 4 occipital horns in contact at the base and continuous with



6 temporal horns, forming a large crown of 10 horns. It has one row of lateral abdominal fringe scales, and ventral scales are keeled. A Desert horned lizard was known to live eight years in the wild, but this is considered a very long life span.

The primary diet of horned lizards is ants, comprising 70 to 90 percent of their diet, depending on the species. They especially like Harvester ants! The rest of their diet includes worms, snails, crickets and beetles. Their diet is determined by examining the stomach content or feces, with the latter almost entirely composed of undigested ant exoskeletons. The horned lizards position themselves near anthills and trails and pick up the ants with flicks of their sticky tongues, consuming literally thousands of ants.

Regal horned lizards, like most but not all horned species, are oviparous. They lay one or two dozen eggs in late summer and don't take care of their eggs or young.

They are active mainly in the morning and later afternoon, spending the hottest part of the day in burrows dug in loose soil. As reptiles, they are ectothermic, with their body temperature depending on their physical environment. They emerge from their burrows in the morning, sunning their heads, and eventually come out to warm up the rest of the body. When the temperature gets too hot, they seek shade or dig themselves back under the soil. By late September, they burrow for hibernation until April, subsisting on fat reserves.



Regal horned lizard at Sears-Kay Ruin
[photo by Dave Mills]

When active, horned lizards are well adapted to defend against predators. Their spiny horns foil many a hawk or snake. Their flat form casts little shadow, and their sedentary nature and camouflaging colors make them difficult to see. They flatten and freeze on being approached. They can also inflate their bodies and hiss to



appear fierce, resembling spiny balloons. If all else fails, they have a unique ability to shoot a stream of blood from the eye up to four feet away. They rarely do this to humans, but dogs, coyotes and foxes show evidence of distaste when subjected to this.

When horny toads were more plentiful, they were often captured and sold or kept as pets, although they don't do well in captivity. Children knew you could hypnotize a horny toad by turning it on its back, and gently stroking its belly! In earlier times, the Anasazi and Hohokam painted and sculpted effigies of horned lizards on their pottery and stone carvings.

Today, local horned lizard populations seem to be in decline, a part of the global decline of reptile species documented by herpetologists worldwide. In less urbanized areas of Arizona, populations are more stable. A reptile expert from Arizona Game and Fish Department indicated that since there is no baseline data on the prevalence of horned lizards, it is difficult to assess the extent of their decline, although most people I interviewed, including experts, no longer see them in areas where they were once plentiful.

It is surmised that many are run over on roads (they like to bask and warm up on asphalt) or are killed by house pets. Others have been found drowned in swimming pools. Researchers in Texas attribute their documented decline both to habitat fragmentation as well as to the use of pesticides and herbicides around homes and businesses that destroys the ants on which horned lizards depend. Globally, reptile declines are attributed to the following: habitat loss; introduced invasive species (e.g., exotic ant species on which lizards can't survive will outcompete the preferred ants); environmental pollution; disease; unsustainable use, such as capture for pets or the curiosity trade; and change in global climate variables, such as temperature and rainfall frequency. So there is no firm answer to "whatever happened to the horny toads?" However, as sentinels of the environment, they are a good example of unintended consequences of our actions, and a reminder to consider the larger implications of the things we do. When spring rolls around, see if you can spot them!

