

# NATURE DETECTIVES

Summer 2021



## TOADS HAVE WARTS...AND THAT'S GOOD!

Warts on *your* skin are not good. Warts can occur when a virus sneaks into human skin through a cut. A medicine gets rid of the virus and then it's good-bye ugly wart. Toad warts look slightly like human warts, but toad warts and people warts are not one bit the same.

Toad warts are natural bumps on a toad's back. Toads have larger lumps behind their eyes. The bumps and lumps are glands. The glands produce a whitish goo that is a foul-tasting and smelly poison. The poison is a toad's ultimate defense in a predator attack. It is toxic enough to kill small animals, if they swallow enough of it. The toxin can cause skin and eye irritation in humans. Some people used to think toad warts were contagious. Touching a toad can't cause human warts, but licking a toad might make you sick!

Toads have other defenses too. Their camouflage green/gray/brown colors blend perfectly into their surroundings. They can puff up with air to look bigger, and maybe less appetizing. Pick one up, and it might pee on your hand.

## Toads Travel, Frogs Swim

Toads and frogs are **amphibians** with some similarities and quite a few differences. Amphibians spend all or part of their life in water. Frogs have moist, smooth skin that loses moisture easily. A toad's dry, bumpy skin doesn't lose water as easily as frog skin. Frogs are always in water or very near it, otherwise they quickly dehydrate and die. Toads start their life in water, but spend most of their adult life on land. Adult toads only go back to the water for a short time, once a year, during mating season.



Frog

Frogs have teeth; toads do not. Frogs are slender, and their long back legs allow them to leap far.

Toads are squat with legs more suited for hopping and for walking over longer distances.



Toad

Turn the page to read more about Boulder County toads....

## Where Are The Toads?

Toads can be hard to find. During cold weather they shelter in deep burrows underground. During hot weather they are mostly active at night. They may be found hopping around on warm mornings or evenings, and they like mild, rainy days in summer.

Their camouflage colors make them hard to spot until they move. They are fond of hiding under rocks, logs, and leaves or digging themselves into the cool dirt during the heat of a sunny day.

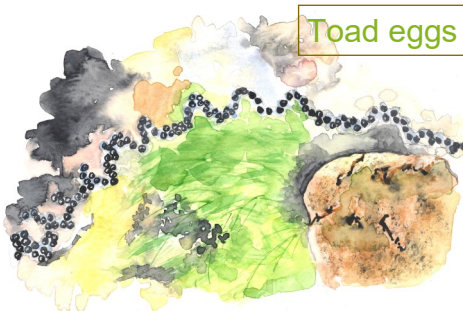
## Toadlets Hopping Here, Hopping There, and There!

Unlike adult toads, young toads (toadlets) are active day and night. Look for them in June or July when large numbers emerge from local ponds and other shallow waters. The toadlets easiest to find are Woodhouse's toads, Boulder County's most common toad. Their habitats range from the plains to the foothills, in places with soft, crumbly soil for burrowing. They often inhabit river valleys, but these toads also live on farmland and even in the suburbs.

In late April to May, adult Woodhouse's toads emerge from their winter burrows and head for the shallow water where they started as a tiny egg. Their sense of smell guides the toads back home. They crowd together in marshes, ponds, lakes, slow-flowing streams, and in large puddles formed by spring runoff or heavy rain. Male Woodhouse's toads inflate a bag on their throats with air to make repeated *w-a-a-a-a* calls, sounding somewhat like bleating sheep. They pair with females attracted to their funny calls.

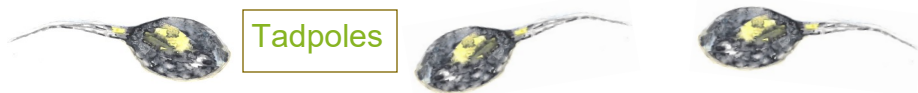


## Metamorphosis – Changing from Egg to Tadpole to Toad



Toad eggs

The female toads lay strings of thousands of dark eggs surrounded by protective jelly. The egg strings lay tangled among water plants for a few days until they hatch into tadpoles, tiny larvae with gills for breathing. In shallow water, eggs and tadpoles are safe from the biggest predatory fish. Some eggs and tadpoles do fall prey to large water insects, garter snakes, and ducks. The surviving tadpoles nibble tiny critters and plant bits, and grow quickly in the warm water.



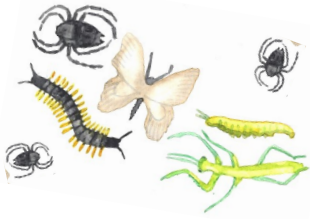
Tadpoles

Tadpole gills start to disappear, replaced by lungs for breathing on land. Four legs develop under their outer skin. When the legs get big enough they simply pop through the skin. Their tadpole tail shrinks, and they crawl from the water in June or July as cute toadlets.

Woodhouse's toadlets are tiny, only a half-inch long from front to back. They eat any little spider, insect or worm they can swallow. They double in size in a month. As the toads grow, they shed their non-growing skin, and swallow it as they shed. New, bigger skin is under the old. Females grow to be biggest, up to about five inches in size.

Toads can live for 20 years or more.

## Woodhouse's Toads Eat a Bellyful



The toads can go for a long time without eating, but when they do eat, they can pack a lot of food in their belly. Ants, beetles, and caterpillars are eaten the most. They also eat moths, spiders, mites, centipedes, crickets, grasshoppers, slugs, maggots, and flies. Every catch is swallowed whole. Their bellies can hold 20 or more bugs of various sizes.

Toads sometimes hunt where lights attract insects at night.

Toads identify prey with their keen sense of smell and good vision, although they can't see colors. Their tongue is a speedy catching tool. Unlike our tongue, the toad's tongue is attached at the front of the mouth. The toad flips the unattached back of the tongue forward, and in an instant, unsuspecting prey is captured on the sticky tip of the toad's tongue.



## Poison-oozing Warts Do Not Stop All Predators

Garter snakes and bull snakes aren't sickened by the poison. Skunks, raccoons and other predators eat parts of toads, but they avoid the toxic skin and head.

## Other Hazards Toads Face

People make life tough for toads. Buildings and roads have replaced much of the land previously inhabited by toads. Pollutants in our soil, air, and water are harmful because a toad's skin easily absorbs toxins in the environment. Pesticides reduce their available food. Climate change causes multiple problems for their existence. And, toads traveling at night and moving across roads are squished in large numbers by cars and trucks.



## Three Other Toads...Hidden or Gone?

**Mountain (Boreal) toads** seem to have disappeared from our mountain forests and are considered endangered in Colorado. The soft call of male mountain toads is a little chirp, which makes them nearly impossible to locate by sound.

**Great Plains toads** are found on grassland areas in other counties, but are no longer seen outside Louisville where they once lived. Their loud, jackhammer-like breeding call lets you know when they are around.

**Spadefoot toads** are numerous in some farmland areas on the county's east side, but the little toads are tricky to find. Pale-colored spadefoot toads spend the whole school year dozing in deep burrows under the ground! To keep from drying out in the summer sun, they tunnel into dirt. They use hard spade-like areas on their back feet as tools to dig backwards. The trick is to find the two-inch toads at their breeding sites on flooded ground after big summer rain storms. The males make a quick, snoring call any time during summer.

## Toad Skin Absorbs Water and Oxygen

Toads can absorb moisture and oxygen through their skin even when they are underground. That's especially useful because they spend so much time tunneled under soil to escape the drying heat of the sun. To avoid the hottest summer days and freezing winter cold, they also shelter in deep burrows made by other animals such as rodents.

Our skin doesn't absorb water as easily, but what happens to your fingers when you spend too much time in the bathtub?

## Hunting for Toadlets

A warm, slightly rainy day in late spring or early summer is a perfect toadlet hunting day. Any open space with ponds nearby is a great location where toads may be spotted by patient or lucky nature detectives.

Toads can readily sense vibrations on the ground, such as the vibrations caused by human footsteps. Toads can hold very still when they don't want to be seen. Their camouflage colors make them hard to see until they stir. On a toad hunt, it helps to walk quietly, stop often, and scan for slight movements that give away the toad's hiding place.



## Tongue Gymnastics

Frogs and toads are lucky because their tongue is attached at the front of their mouth, instead of at the back like ours. Stick your tongue out as far as you can and use a ruler to measure how far it extends beyond your lips. Then imagine how much farther it would reach if it was attached right behind your front lower teeth! That would be a great bug zapper!

### Sherlock Fox says:

If you gently pick up a toad for a closer look, wash your hands before putting your hands near your face. Remember, the toxin in toad warts can cause your eyes and skin to feel very irritated. Toad skin also carries bacteria. You can easily wash off bacteria with soap and water. Better for those bacteria to disappear down the drain rather than end up in your mouth with your next snack! Hand sanitizer works when water isn't available.



And, be sure to put the toad back carefully, right where you found it.