

Wildlife Express!

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**Toad-ally
Awesome**

photo © Jeremiah Easter





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Let's Look at...

Great Basin Spadefoot Toad

In southern Idaho, you can find a special little amphibian, the Great Basin spadefoot toad. The scientific name for the Great Basin spadefoot is *Spea intermontana* (SPEE-a in-ter-mon-TAN-a).

The Great Basin spadefoot has shovels on its feet! Well, sort of. Spadefoots are burrowing toads. On each back foot, they have a black, wedge-shaped spot. This little spade works like a shovel and helps them dig.

The Great Basin spadefoot toad is not a true toad. True toads have large glands just behind their eyes that make a type of poison. Spadefoots don't have these glands. What really make spadefoots different are the pupils in their eyes. The black pupils in the spadefoot's eyes are vertical. They run up and down. Other toads have pupils that are horizontal. They run left to right.

Great Basin spadefoots are found in pretty dry places. They are found in open habitats in the desert. They really seem to like grasslands and areas where there are some bushes, like sagebrush.

When things get too dry or hot, spadefoots will burrow underground. They can stay buried for many months. While waiting for rain, Great Basin spadefoots shut their bodies down. They go into something called **aestivation** (ES-ti-va-shun). This is like **hibernation**, but it happens during the summer. They go into a deep sleep and wait for things to get wetter or cooler. During the colder winter months, spadefoots hibernate.

Even though spadefoots live in dry places, they still need water every few years. They must lay their eggs in water. After a spring or summer rain, you might hear the breeding call of a male spadefoot. The call is a hoarse wah-wah-wah. Spadefoots will lay their eggs in farm ponds, shallow lakes and even rain puddles. The female lays clusters of eggs. Each cluster has 20 to 40 eggs. The female may lay between 300 to 500 eggs. That's a lot of eggs for a two-inch toad! The eggs hatch quickly, usually in two to three days. They eat plants in the water. In just a few weeks, the tadpole is transformed into an adult. Spadefoots develop quickly before their water pools dry up.

Great Basin spadefoots look for food at night. They like to eat ants, beetles, grasshoppers, crickets and flies. When looking for food, spadefoots need ways to protect themselves. **Camouflage** (KAM-e-flazh) is number one. Spadefoots look a bit like a rock. If camouflage doesn't work, they have another trick up their sleeves. Great Basin spadefoots make a nasty skin secretion. This nasty stuff will repel most predators. If you grab a spadefoot, you might start sneezing! The secretion has been known to make humans sneeze.

Keep an eye out for Great Basin spadefoots next time you are in southern Idaho. Look for the vertical pupil, and watch out for the sneezes!

What is an Amphibian?

Have you ever caught a frog? If you have, you've held an **amphibian** (am-FIB-ee-un). Frogs are amphibians. Toads and salamanders are amphibians, too. Amphibians are split into three groups. The first are **caecilians** (si-SIL-yens). They are leg-less and look like worms. Idaho doesn't have any caecilians. Salamanders and newts are the next group. Idaho has four salamanders and one newt. The last group is frogs and toads. We have 10 different frogs and toads in our state.

Amphibians are the only **vertebrates** (animals with backbones) that go through a **metamorphosis** (met-a-MOR-fo-sis). Their bodies change shape as they develop and grow. All amphibians start their lives inside eggs. The eggs hatch and then the amphibians are called **larvae** (LAR-vee). Larvae have round bodies with tails. We call frog and toad larvae tadpoles. The larvae then change into adults. They sprout legs, and the tail goes away. That's a big change!

Amphibians are usually found in or around water. All amphibians lay their eggs in a wet place. Amphibian eggs are not covered with hard shells. They are covered with layers of jelly. The jelly needs to stay wet. The developing amphibian inside the egg needs to breathe. If the jelly dries out, air can't flow in and out of the egg. The amphibian will die.

Most larvae live in water. They breathe with gills. Most adults live on land and breathe with lungs. Many amphibians can breathe through their skin! Their moist, thin skin lets oxygen and other gases pass right through.

Some amphibians have bumpy skin. The bumps are glands that ooze liquid. The glands help keep their skin moist. Some glands make poison or stuff that tastes bad. This helps protect amphibians from predators.

Amphibians are cold-blooded animals. Cold-blooded animals cannot make heat inside their bodies. If a frog lives in a pond and the water is 50 degrees, the frog will also be 50 degrees. Instead of cold-blooded, many scientists like to use the word **ectotherm** (EK-to-therm). Ecto means outside, and therm means temperature. You could also hear them called **poikilotherms** (poy-KEE-lo-therms). That's more fun to say than cold-blooded!

Amphibians are amazing animals! Keep an eye out for them next time you are wading in the water.

A Long Winter's Rest....

Have you been outside exploring nature lately? You might not have seen as many animals as you did a few months ago. A certain kind of hush has fallen over the woods. Animals are ready for winter.

Many animals are either underground in burrows or hidden in caves. Their body functions slow way down. They don't breathe as often. Their hearts don't beat as often, and there is almost no sign of brain activity. These animals' bodies have sort of turned off for the winter. These animals are hibernating.

Do you think spadefoot toads **hibernate**? Some people would say yes. Other people think that only mammals are hibernators. They like to use a different word for cold-blooded animals that sleep and rest during the winter. They use the term **torpor** or **dormant**.

Many animals sleep during the winter, but scientists only call some of them true hibernators. The body temperatures of these animals drop a lot while sleeping. Marmots almost freeze to death. Their temperature drops to 38 degrees Fahrenheit! Water freezes when it's 32 degrees outside. Marmots and some bats, some squirrels and some chipmunks are true hibernators.

Mammals that hibernate usually go into hibernation with a thick layer of fat on their bodies. They eat a lot of food during the summer and fall. Some of the food is stored as brown fat. This special fat is found across the back and shoulders. During the winter, their bodies use the fat like food to keep their hearts beating.

Some true hibernators aren't asleep the whole winter. They warm their bodies and wake up. They may be awake for an hour, or they may be awake a whole day. People aren't sure why some animals wake up. It may be to nibble on stored food. Some animals go to the bathroom in special rooms in their burrows. Waking up could also help animals fight off germs that may make them sick.

Most animals hibernate and rest during the winter because they can't find enough to eat. Spadefoot toads eat insects. Cold weather either makes the insects rest or kills them. The spadefoots wouldn't find anything to eat if they stayed active all winter. They would starve to death.

Doesn't nature have some interesting ways of dealing with the cold and harsh winter?



Game – Elk or Checkers?

The Idaho Department of Fish and Game looks after Idaho's wildlife. So do the people who work for Fish and Game go fishing and play Monopoly all the time? No, but what exactly does **game** mean?

You may hear a hunter use the word game. Game is the word used to describe any animal that may be hunted, fished or trapped for food or sport. Elk, deer and trout are examples of game animals. Only 20 percent of the wildlife species found in Idaho are game animals.

With the name Idaho Fish and Game, some people may think that Idaho might only look after game animals. This is not true. All of Idaho's animals are important for healthy habitats.

To hunt and fish in Idaho, people must buy a license or tag. This money is used to care for Idaho's wildlife and habitats.

People that work for Idaho Fish and Game may like to play Monopoly and checkers, but they play those games at home. At work, they are busy looking after Idaho wildlife!

Nongame Critters

Nongame animals are usually not hunted, fished or trapped. There are 502 different nongame species in Idaho. That's a lot of animals! Raptors, songbirds, snakes and frogs are just some of the animals in this group.

In July 1982, Idaho started its first nongame program. This was the year that a special box was added to Idaho's tax returns. People could check the box and donate money to Idaho's nongame animals. Have you seen cars with license plates that have bluebirds, elk or trout on them? These are nongame license plates. Part of the money people pay for these license plates also goes to programs to help nongame animals.

Even though you can't hunt nongame animals, they are important to have around. Nongame animals are important parts of the ecosystem. They are also fun to watch.

Have you ever seen a brown sign along the road with binoculars on it? These signs are part of a program called Watchable Wildlife. The signs let you know that you are in a great spot to see wildlife. If you see a brown sign with binoculars, stop, look and listen. You may just get a chance to spot some of Idaho's nongame animals!

collared lizard



What's Wrong With That Frog?

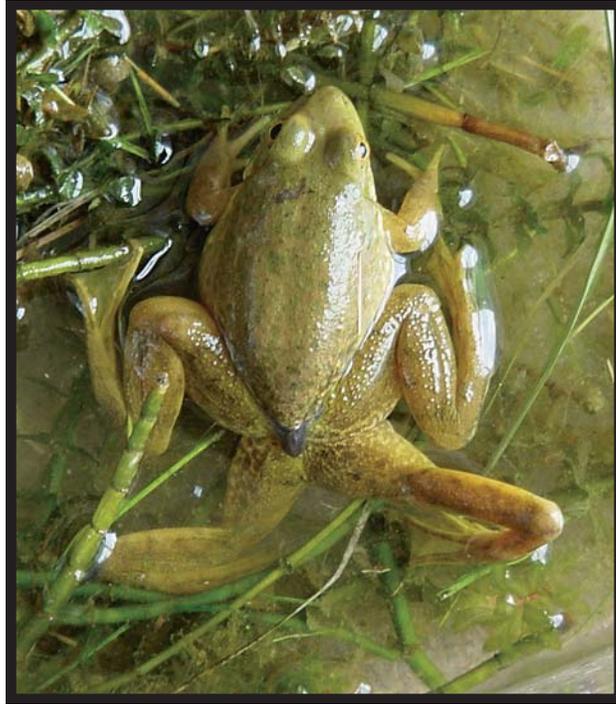


photo by Mike Todd, IDFG

Have you ever seen a frog with more than four legs? How about frogs with only two or three legs? All across the country people are discovering frogs that don't look the way they should. Some have too many legs or not enough legs. Still other frogs have legs in the wrong place. What's happening?

Scientists have done studies to try and figure out what happened to the frogs. Many scientists think that it is a combination of things that has caused the frogs to develop strangely. Most of the strange looking frogs lived in ponds and lakes where parasites and pesticides are found.

A parasite is an organism that lives off of another living thing. The parasite that seems to be causing the problem with frogs is the **trematode**. They are found in many ponds and lakes. Trematodes have many different stages in their life cycles. One stage is called the larval stage. Tadpoles can pick up the trematode larva. The larva changes in the tadpole's body into a hard **cyst** (sist). It is kind of like a hard little ball. When the cysts develop in the part of the tadpole that will change onto legs, problems happen. The legs don't develop normally. This may cause extra legs to grow or no legs may develop at all.

People can also get the parasite. Have you ever had a rash called swimmers' itch? This is caused by the trematode. People only get a rash, because we are better at fighting off the parasite.

The parasite has always been around. The reason we see more frog deformities now is because of pesticides in the water. Pesticides are chemicals that are used to kill pests in fields and gardens. Pesticides seem to make it harder for frogs to fight off the infection of the parasite, so more frogs are showing up with the wrong number of legs.

People are concerned. The pesticides that affect frogs may start making it harder for humans to fight off infections and parasites, too. Some people think pesticides should not be used as much. What do you think?



Freaky Frogs!

Worldwide there are about 4000 different frog species. Each frog is unique and has the special features it needs to live in its habitat. Here is a look at just some of the amazing frogs that share our planet.



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In central and north central Idaho, near cool, fast moving streams you may find a frog called the tailed frog. Only the males have a tail. Their short tails are not real tails like those of salamanders. Their tails are used for mating. Tailed frogs lay their eggs in very fast flowing streams. The female lays sticky eggs under rocks in the bottom of the stream. Tailed frog tadpoles are a bit different, too. They are born with a mouth that has a big suction cup on it. They hold into the rocks with their mouths. This way they won't get washed downstream with the current.



© 2001
Joyce Gross

Another amazing frog in Idaho is the wood frog. It is found only in the most northern parts of Idaho. Wood frogs can even live in the Arctic Circle! Most frogs would freeze to death. The wood frog freezes too, but it doesn't die. Wood frogs can turn the sugar in their blood into a type of antifreeze. The special antifreeze goes to their organs. The heart, brain, liver and other organs don't freeze, but the rest of the body freezes are solid as a popsicle!



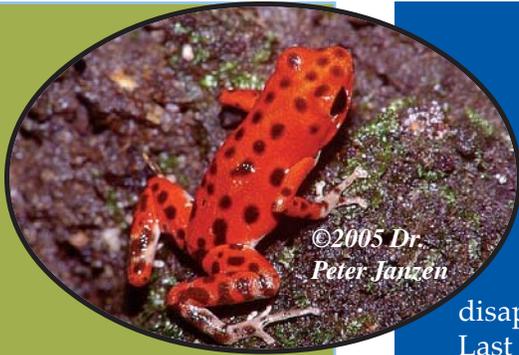
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Leenders

Reticulated glass frogs are found in the rain forests of Costa Rica and Ecuador. You can see why they are called glass frogs. You can look right through some parts of their bodies! Male glass frogs take their role as parent very seriously. They guard their eggs. This frog is nocturnal, but they will even stay with their eggs during the day. They will sleep with the eggs and even touch them. The eggs are laid on the underside of leaves. If something lifts the leaf up or gets too close, the male glass frog will spread himself over the eggs to hide them.

Another very devoted frog father is the midwife toad. There are many different kinds of midwife toads throughout the world, but they all have something in common. The males carry their eggs on their back legs and backs until they hatch! As the female lays her eggs, the male scoops them up with his legs. If the eggs get a bit dry, he dips them in water. When it is time for the eggs to hatch, the midwife toad will find a pool of water, put his legs in the water and shake the tadpoles free.



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Marquez



Strawberry poison dart frogs are also good frog parents. These small frogs lay three to five eggs in a jelly-like mass on leaves. Both parents visit the eggs to check on them and make sure they are moist. Once the eggs are ready to hatch either the male or female steps into the jelly to free the tadpoles. One at a time, the tadpoles climb into the back of a parent. The parents carry the tadpoles to water pools that form in plants. The tadpoles are kept in separate pool, so they won't eat each other. Each day the female visits a tadpole and lays one unfertilized egg in its pool. This is the tadpole's food. Poison dart frogs make a toxin to protect them. The toxin is found in the mucus that covers their bodies. If a strawberry poison dart frog is captured and kept in a cage, it loses its toxin. They get their toxin from something they eat in the wild, but people aren't really sure what it is yet.

There sure are some amazing frogs out there!

Where Have All the Frogs Gone?

In many parts of the world, frogs and other amphibians are disappearing. People are starting to study them to see what is wrong. Last year 500 scientists from all over the world got together to talk about amphibians. Most of the news was not so good.

In the last 25 years, 122 amphibians have disappeared. Some are extinct. Others have not been seen in the wild for many years. People think those amphibians are probably extinct, too. Thirty-two percent of all the amphibians in the world are now close to being extinct. The country with the most endangered amphibians is Colombia. They have 208 species that are endangered.

Many endangered frogs are found in countries that have tropical rain forests. Some forests are being cut down. Amphibians are losing their habitats. Mining is something else that has hurt many amphibians. Pollution also affects them. With their thin skins, pollution and other harmful things can pass right into their bodies.

Some people like to keep amphibians as pets. Keeping a frog as a pet is a big responsibility. Some frogs are bred in cages and are meant to be pets. Other frogs are taken out of the wild. One frog that has been hurt a lot by the pet trade is the endangered painted burrowing frog in Madagascar. Thousands of frogs have been collected to sell as pets. The frogs are beautiful and very special. They burrow into sand and loose soil like a toad, but they also can climb up canyons walls! They have large pads on their toes and long claws that let them climb straight up the slick canyon walls. When rain falls and floods the canyons, the painted burrowing frog climbs up the walls of the canyon, so it won't drown. These frogs are great climbers but not so great at swimming. People are trying to breed these frogs in cages. If they can breed the frogs in captivity, then maybe people will leave the wild frogs alone.

Frogs are some of the first animals that are affected by pollution, drought and habitat destruction. They are often the first to tell us something is wrong. If we don't start listening, we could lose some of them forever.



Spadefoot Scramble

Unscramble the letters to complete the sentences.

The Great Basin spadefoot is found in _____ (resutohn) Idaho.

When it is very dry, spadefoots will _____ (asiveeta).

_____ (egcfumaalo) helps protect the spadefoot from predators.

Frogs and salamanders are examples of _____ (spihmabnia).

Frogs can _____ (betehra) through their skin.

Pesticides are one thing that may be causing frog _____ (drmfostiie).

Spadefoots are considered to be _____ (gnaoenm) animals.

Great Basin spadefoots go through a _____ (ssimerhpootma) during their development.

Amphibians are _____ (dclo) blooded animals.

One way to tell spadefoots from other toads is the pupils in their eyes are _____ (lvtceari).



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WE WOULD LIKE TO HEAR FROM YOU !

If you have a letter, poem or question for *Wildlife Express*, it may be included in a future issue! Send it to the address printed above!