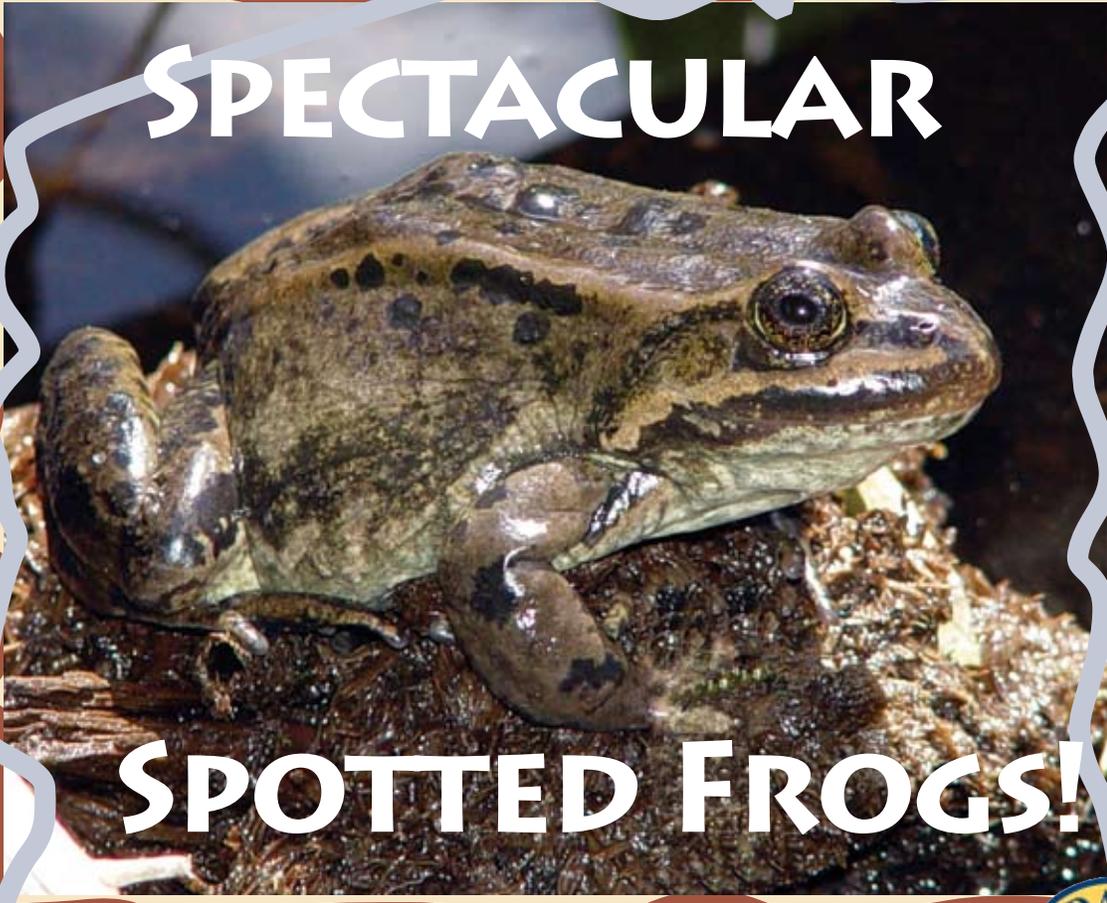
The title "Wildlife Express!" is rendered in large, colorful, stylized letters. Each letter is decorated with various wildlife illustrations: a bear on the 'W', a rabbit on the 'i', a goat on the 'l', a snake on the 'd', a hawk on the 'l', a bear on the 'i', a wolf on the 'f', a frog on the 'e', a moose on the 'E', a fish on the 'x', a beaver on the 'p', a butterfly on the 'r', and a mole on the 's'.

Wildlife Express!

Volume 21

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A close-up photograph of a spotted frog, likely a Pickerel Frog, resting on a log. The frog has a mottled brown and green pattern with dark spots. The photo is framed by a white border with a wavy, hand-drawn appearance.

SPECTACULAR

SPOTTED FROGS!

Photo Courtesy Mike Demick



LET'S LOOK AT...



Photo courtesy Bruce Haak

SPOTTED FROGS

As the snow and ice of winter thaws, Idaho's spotted frogs start to get active. Spotted frogs can be found all across northern Idaho and in the south-western corner of the state. The only place you are not likely to see spotted frogs is within the Snake River plain. They like the calm waters of lakes, ponds, springs and marshes. They are rarely found too far away from water.

As you probably figured out, spotted frogs do have spots, but most frogs have spots. How do you know you are looking at a spotted frog? Spotted frogs are considered a medium-sized frog. They might grow to be a little over three inches long. Their backs are a brown to olive green color with irregular dark spots. Their bellies and undersides of their legs are light cream, yellow or pink! The one feature that sets them apart from other Idaho frogs is a light-colored stripe that runs along the upper lip.

Once the snow melts and the water temperature warms up, spotted frogs begin to breed. Males will gather in shallow water and call during the day. This is a frog that doesn't "ribbit." The males' calls sound a bit like soft "clucks" or thumps. The females will lay their eggs by the males that have the best sounding "clucks." The eggs are laid in a ball-shaped mass of jelly. Each ball may contain up to 1300 eggs! The egg mass soaks up water and becomes about the size of a soft-ball. Egg masses are not attached to anything, so they float on top of the water.

The eggs will hatch in three to 21 days. It all depends on the temperature of the water; the warmer the water the faster the eggs will develop. Spotted frog tadpoles are brownish-green in color with gold flecks on their backs. Their bellies are a silvery color, and you can see their intestines through their skin! Tadpoles may complete their metamorphosis into adult frogs by fall, or they may stay tadpoles through the winter and change in the spring. They won't start to breed until they are two to six years old.

Spotted frogs eat just about anything that wanders too close, if they can fit it in their mouths. The adults' diet includes snails, insects, and spiders. The tadpoles eat bits of plants and tiny organisms in the water. Spotted frogs need to look out for bullfrogs, herons, and any other critter that thinks a frog will make a tasty treat.

Spotted frogs hibernate during the cold of winter. They may even aestivate. This means that they sleep during the summer when it is too hot or dry. A small mammal burrow, the undercut of a stream bank or a deep lake or pond are the best places for them to stay until the weather gets better.

Spotted frogs are spectacular! See if you can find one while you are exploring Idaho's wet places.

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 (sa-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



photo courtesy Frank Lundburg

(Continued)

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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, and the amphibian would 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 amazing animals! Keep an eye out for them next time you are wading in the water.

WHAT'S HERPETOLOGY?

Have you ever heard of herpetology (her-pe-TOL-o-jee)? In Greek, *herp* means "creeping", so herpetology is the study of creeping things. It is the study of reptiles and amphibians. Many people just call them herps for short.

Amphibians and reptiles may look a bit alike and share a few things in common. They are both cold-blooded; most have legs, and most lay eggs. But they really are quite different. In fact, birds have more in common with reptiles than amphibians. Let's look at some of the differences.

Amphibians have thin, moist skin. Reptiles have tough, thick skin covered with scales. Amphibians go through different stages in their development. Reptiles do not go through this sort of change. Amphibians need a wet place to lay their eggs. Reptiles lay their eggs in dry places.

With so many differences, how did amphibians and reptiles get grouped together? They were grouped together before people knew much about them. With modern science, people know a lot more about animals than they did in the past. Scientists can look inside cells and see how animals are put together. As we learn more and more about animals, we may discover other ways amphibians and reptiles are different from or similar to each other.

If you want to go "herping" and look for reptiles or amphibians, here are some things to keep in mind. You are more likely to see an amphibian or reptile in the spring during the breeding season. Use a good sturdy stick to flip things over. Many herps hide under rocks, logs and leaves, so looking under things is a good place to start. Look for amphibians at night and reptiles during the day.

If you would like to get a close look at an amphibian or reptile, place the animal in a clear plastic box. Amphibians will probably need a bit of water in the box. Herps can bite! Use a net or wear thick leather gloves when handling animals. Never handle or get too close to a rattlesnake. Once you are done looking at your herp, put it back where you found it.

Herpetology can be fun! Read books and watch videos to learn more about amphibians and reptiles. Then go exploring outside and look for herps around your neighborhood.



Courtesy IDFG

COLD-BLOODED

Amphibians are cold-blooded animals. Turtles, insects, snakes, fish and frogs are also cold-blooded animals.

Cold-blooded animals really don't have cold blood. They just 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 may also hear them called poikilotherms (poy-KEE-lo-therms). That's more fun to say than cold-blooded!

Cold-blooded animals are most active in warm weather. Cold weather slows down their muscles. That's why cold-blooded animals lie or bask in the sun. The sun helps to warm them up. If they get too warm, they need to move to a shady spot. They could also dig down in the dirt to get out of the sun. Colder weather can kill cold-blooded animals. They need to migrate to warmer places or move underground. Some cold-blooded animals, like bees and dragonflies, shiver to stay warm.

Cold-blooded animals have a real advantage in deserts. Deserts are warmer and food is often harder to find. Cold-blooded animals don't need to eat as much as warm-blooded animals. Sometimes they can go months between meals. This is why you often see more cold-blooded animals living in deserts.



photo courtesy Frank Lundburg



photo courtesy IDFG

WARM-BLOODED

Warm-blooded animals have body temperatures that don't change with the weather. Their temperatures stay about the same in cold weather and in hot weather. Mammals and birds are warm-blooded.

Warm-blooded animals can make heat if they are cold, and cool themselves if they are hot. To make heat, warm-blooded animals turn the food they eat into energy. Only a small amount of the food a warm-blooded animal eats is turned into muscle. The rest is used to keep its body temperature even. Some animals can shiver to help keep themselves warm. You may also hear people call warm-blooded animals, endotherms (EN-do-therms). Endo means inside, and therm means heat. So, an endothermic animal makes heat inside its body.

To keep cool, endotherms sweat, pant or move to a cool place. Only mammals can sweat. People and monkeys have sweat glands all over their bodies. Dogs and cats only have sweat glands on their feet, so they need to pant if they get too hot.

Warm-blooded animals can be found in almost any habitat on Earth. They can be found in Arctic regions and hot tropical areas. As long as they can find enough food, a warm-blooded animal can call just about any habitat home.

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.

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. 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 onto the rocks with their

mouth. This way they won't get washed downstream with the current.

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 as solid as a Popsicle!



Photo courtesy Joyce Gross ©2001

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 a parent very seriously. They guard their eggs and even sleep with 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.



Photo courtesy Twan Leenders ©2003

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 backs and back legs until they hatch! As the female lays her eggs, the male scoops them up. If the eggs

get a bit dry, he drips 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.



Photo courtesy Dr. Rafael I. 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. When the eggs are ready, the parents step on 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 pools, 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 themselves.

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.



Photo courtesy Dr. Peter Janzen ©2005

There sure are some amazing frogs in the world!

WHAT'S WRONG WITH THAT FROG?



Photo courtesy 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 think that it is a combination of things that has caused the frogs to develop strangely. Many of the strange looking frogs live 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?

WHERE HAVE ALL THE FROGS GONE?

In many parts of the world, frogs and other amphibians are disappearing. Scientists from all over the world are studying amphibians to try and figure out what is going wrong.

In the last 25 years, 122 amphibians have disappeared. Some are extinct. Others have not been seen in the wild for many years. 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 and pollution has hurt many amphibians. With their thin skins, pollution and other harmful chemicals can pass right into their bodies. Global warming is also thought to have contributed to the decline.

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 canyon walls! They have large pads on their toes and long claws that let them grab onto the slick canyon walls. When rain falls and floods the bottom of the canyon, the painted burrowing frog climbs up the walls of the canyon, so it won't drown. These frogs are great climbers but not great swimmers. 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.

READ ALL ABOUT
.....WOOD DUCKS
IN THE APRIL
ISSUE OF
WILDLIFE
EXPRESS.....



photo courtesy Frank Lundburg

Words

Amphibians

Eat

Intestines

Mass

Pesticides

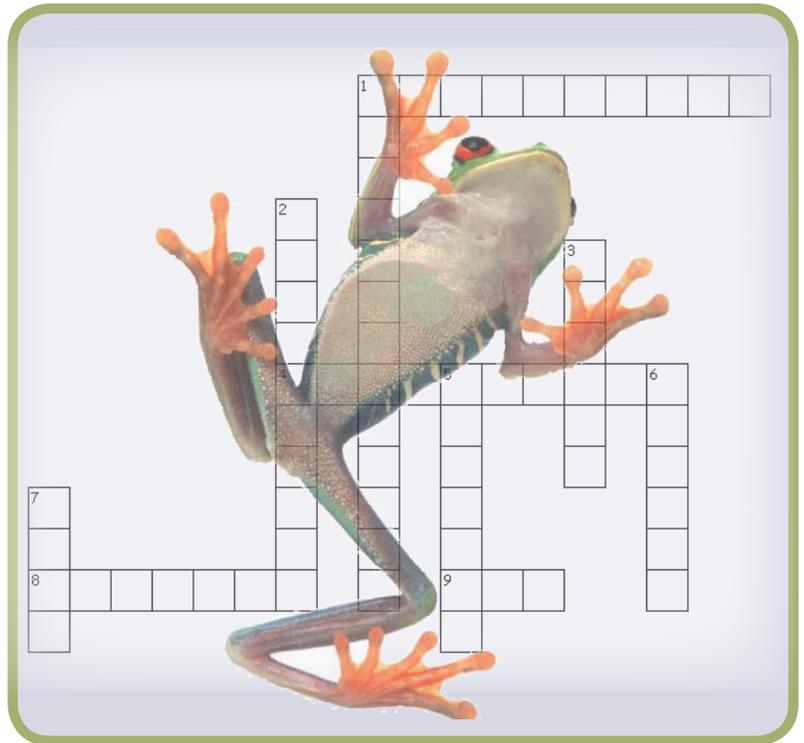
Plants

Poikilotherms

Species

Spiders

Stripe



Across

1. It is harder for frogs to fight off parasites when _____ are in the water.
4. You can see the _____ of a spotted frog tadpole through its skin.
8. Adult spotted frogs may eat insects, snails, or _____.
9. Bullfrogs may _____ spotted frogs.

Down

1. Amphibians are _____ or cold-blooded animals.
2. Frogs are _____.
3. Tadpoles eat small bits of _____.
5. There are 4,000 different _____ of frogs in the world.
6. Spotted frogs have a light-colored _____ along their upper lip.
7. As many as 1,300 eggs are laid in a spotted frog egg _____.

WILDLIFE EXPRESS

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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!