

Wildlife Express

Volume 36 | Issue 9

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RATTLESNAKE



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inside

Grabbing Grub

Do snakes hibernate?

Do snakes really have cold blood?

Snakes – Sinister or Sacred?

The mistaken identity of the Gopher Snake.



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IDAHO'S RATTLESNAKES

What goes through your mind when you hear someone yell, "Rattlesnake!" Do you get nervous or scared? Or do you think, "Cool!" Many people have mixed feelings about snakes, especially rattlesnakes. Often rattlesnakes are misunderstood.

Rattlesnakes are found everywhere in Idaho except in the far north and higher mountain elevations. Two rattlesnakes live in Idaho. The most common species is the western rattlesnake, also called the northern Pacific rattlesnake or Great Basin rattlesnake. They are found across southern Idaho and up along the western borders with Oregon and Washington. The other species found here is the prairie rattlesnake. They are found in east-central Idaho and a small section near Idaho's northeastern border with Montana. Prairie rattlesnakes are especially common in the

Frank Church River of No Return Wilderness. Both snakes have similar looks and habits.

You can find rattlesnakes in a variety of habitats. They may be found in sagebrush deserts, forests, grasslands or around water. They like rocky areas where they can find shelter. They usually are found on the ground but will sometimes crawl up into bushes and trees. You might even find them swimming across a river or lake.

Rattlesnakes are best known for the sound they make. When rattlesnakes feel threatened, they shake the rattle on the end of their tails. They can twitch their tails 20 to 100 times per second! The warmer a snake is the faster it can shake its tail. The rattle is made of interlocking rings of keratin. Your fingernails are made of keratin. Every time a snake sheds its skin a ring is added to the rattle. Snakes shed their skin many times throughout the year, and the rings

can break off. So, you can't tell a rattlesnake's age by the number of rattles it has on its tail. The rattling may sound scary, but Idaho's rattlesnakes are usually calm. Even when approached, they often remain still and quiet. They would rather avoid being seen or heard. Rattlesnakes come in a variety in colors. They may be brown, tan, gray or olive green with brown or black patches. Sometimes the patches are outlined in thin brown or white lines. Their bellies are cream or yellow colored. Younger rattlesnakes are generally more colorful. As they get older the colors tend to fade and the patches blend in more with the background color. Rattlesnakes are colored to help them camouflage against the rocky ground where they live. Looking like rocks and dirt is a great way for rattlesnakes to protect themselves and sneak up on prey.

Rattlesnakes are the only dangerous snakes in Idaho. They use venom to kill their prey. Have you ever noticed that rattlesnakes have a heart-shaped or triangular-shaped head? The head shape is caused by two large venom glands. Rattlesnakes coil up and wait for food to come near. When they strike, two long, hollow fangs swing down from the top of the mouth. Venom flows from the glands, through the fangs and



into the animal. Venom kills the animal, making it easier for the rattlesnake to get its meal. Adult rattlesnakes eat many animals that are considered pests, like mice and ground squirrels. They may also eat rabbits, lizards, eggs, and birds.

An amazing thing about rattlesnakes is that they give birth to their young! Rattlesnake eggs develop and hatch inside the mother. In Idaho, the babies, called snakelets, are born between late August and early October. Rattlesnakes are born without a rattle. When they are one to two weeks old, they shed their skin for the first time. This is when the rattle gets its first ring. Snakelets eat small prey like insects and small lizards.

Rattlesnakes are vulnerable to the heat and are prey for animals like hawks. Because of this, they are mostly nocturnal, especially during hot summer months. During the day, they hide under bushes, rocks or in rock crevices. This doesn't mean you will never see a rattlesnake hunting or sunning themselves during the day. You could see them out during the spring or summer on cooler days.

Whether you love them, hate them, or fear them, rattlesnakes are fascinating creatures.

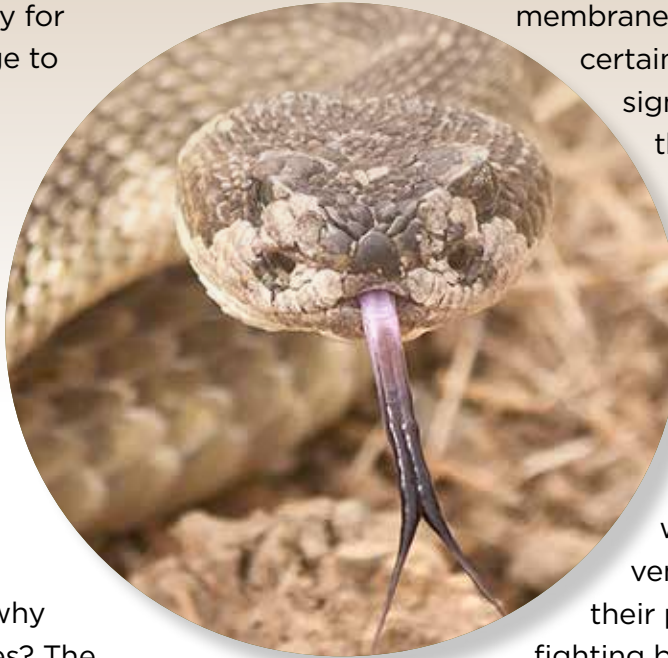


GRABBING GRUB

Catching prey can be tricky for rattlesnakes. It's a challenge to catch animals without any legs to chase them down. This is why snakes are ambush predators. They sit and wait for prey to wander close to where they are hiding. Rattlesnakes have developed some amazing adaptations to help them find and capture food.

Have you ever wondered why snakes have forked tongues? The forked tongue is part of a system that helps snakes track down prey. All snakes have vomeronasal (vo-me-row-NAY-zel) organs, also called Jacobson's organs. These organs are found at the base of each of the nasal cavities. Snakes have two holes in the roof of their mouths that link to the organs. When snakes flick their tongues out, they separate and spread the tips out as far as possible. Each tip gathers scents. By flicking their tongues up and down quickly, snakes create two tiny whirlwinds that act like fans. The swirling air directs odors onto the tongue tips. Snakes then pull in their tongues and touch each tip to a hole. Scent chemicals are sent to the organs and then on to the brain. The scents are analyzed separately. This allows snakes to smell two different places at the same time! This helps snakes follow the scent trails of prey and determine if it is located to the left or right by the strength of the scent.

Pit vipers, like Idaho's rattlesnakes, have another trick to find prey. They can see in infrared and hunt in total darkness! Small pits, located between the eyes and nostrils, contain a



membrane that senses heat. When a certain temperature is reached, signals are sent to the brain that draw a picture of the shape and size of what the pits sensed. This picture helps rattlesnakes figure out if the creature is something to eat or something that might cause them harm. If prey is detected, rattlesnakes will strike quickly to inject venom. This will prevent their prey from running away or fighting back.

Venom contains chemicals that have toxic effects in the bodies of other animals. Rattlesnake venom is one of the most complex venoms of any snake. It contains over 100 different active compounds. Neurotoxins attack the nervous system. They cause damage to the brain, nerves and paralyze muscles. Neurotoxins also may cause a victim to lose consciousness, but they usually don't cause a great deal of pain. Hemotoxins contain digestive enzymes that break down blood and soft tissues. This causes swelling, bleeding, tissue death and often severe pain. The structure of rattlesnake venom can vary from individual to individual. The snake's age, location and diet all influence the venom's make up and the amount available to inject. Even the amount of time between meals may affect venom.

Even without limbs, rattlesnakes are remarkable predators. Their astonishing adaptations often give them an advantage in a predator and prey showdown.

DO SNAKES HIBERNATE?



Snakes go into a partial dormancy or sleep during the winter. They become less active, growth stops and bodily functions slow down. It is a bit different than mammal hibernation, so it has a different name. Snakes and other reptiles enter a state of brumation (BREW-may-shuhn) during the winter.

Mammals that hibernate eat a lot of food in the late summer and fall. They want to put on a nice, thick layer of fat to help them survive. Snakes also increase the amount of fat under their skin, but not as much as mammals. They usually eat less and less as winter approaches. Snakes need warm temperatures to help them digest their food. If snakes ate right up to the day they entered a winter den, they may be left with undigested food in their stomachs. This undigested food could rot and kill the snake. Instead of storing fat, snakes increase the amount of stored glycogen (GLIE-kuh-jen). Glycogen is a kind of sugar that is stored in the muscles and the liver. Mammals use fat reserves to survive the winter; snakes mostly use glycogen. Glycogen keeps muscles in good condition, so they are ready to move when it

gets warmer. Glycogen is also easy to convert back to glucose (GLOO-kohs), which is sugar the body can use easily.

Many mammals that hibernate are in a deep sleep for most of the winter, but not snakes. With a supply of sugar ready when they need it, they have periods of activity. On warmer days, they venture out and bask in the sun. They may also seek out water to drink. With their slowed metabolisms, snakes move slowly and sluggishly. They are vulnerable and stay close to the safety of their dens when active during brumation.

Snakes seek out sheltered, quiet places for the winter. Rock crevices, caves or old mines are all great locations. Snakes may brumate alone, or they may den up with other snakes. Rattlesnakes may even share den sites with other snake species, like racers. If you are exploring Idaho this spring and see a snake, look around for denning sites. There could be more snakes close by waking up. Be alert and step carefully!

SNAKEBITE!

Rattlesnakes are found across most of Idaho. Although most are docile, you need to remember that rattlesnakes may be living where you are enjoying the outdoors.

To avoid being bitten, be alert to your surroundings. Listen for rattlesnakes making their warning sounds. If you hear a rattlesnake, you are too close and should move away from the sound. Be mindful of where you are stepping or sitting, and never reach under a rock with your hand. If you must move a rock, use a sturdy stick. Never try to grab a rattlesnake or any snake! Most snakebites happen because someone surprised the snake, harassed it, or tried to pick it up. The snake was just trying to protect itself. Leave the snake alone and it will be happy to do the same.

Have you ever heard that a baby rattlesnake's bite is worse than an adult's bite? Well, here are some things to consider. Many factors contribute to the severity of a snakebite and the results it has on a victim. Baby rattlesnakes usually have venom that contains more fast-acting neurotoxins. This is because they tend to eat faster prey, like lizards. Fast-acting venoms will subdue prey before they run too far away. Larger rattlesnakes eat larger prey, like ground squirrels. Larger prey will take longer for a snake to digest, so their venom usually contains more digestive enzymes. Baby rattlesnakes' venom might be more potent for subduing prey, but neurotoxins usually don't cause a lot of pain. Adults produce, store, and inject 20 to 50 times more venom because of their size. They are also injecting venom that contains more painful hemotoxins. Any rattlesnake that is stepped on or feels threatened is likely to wallop the victim with venom. Whether from a baby or adult, a rattlesnake bite is something you would not want to experience!



If you or someone you are with is bitten by a rattlesnake, here are some things to remember.

- Move away from the snake to keep it from striking again.
- Do not try to kill the snake to take it to the emergency room.
- If you have cell service, call 911.
- Get medical attention as soon as possible. Time is critical.
- Stay calm and try to keep the victim calm and quiet. Use a splint to prevent the bitten limb from moving. Movement will increase blood flow and spread the venom more quickly.
- Do not try to suck out the venom, put a tourniquet above the bite site or make cuts over the bite. It will not stop the spread of the venom; it will only make things worse.
- Try to keep the bite below the level of the heart.
- Make sure there is nothing tight around the bite area as it swells. Remove rings and bracelets if the person is bitten on the hand.

Although you need to be mindful of rattlesnakes when out enjoying nature, rattlesnake bites are rare in Idaho. They won't come out of a hiding spot to attack you. You may even walk right by one without even knowing it.

DO SNAKES REALLY HAVE COLD BLOOD?



If you hear an animal is cold-blooded, does that mean the animal's blood is cold? Well, not really. It means they are the same temperature as their surroundings. If a snake is lying on sand that is 60 degrees, the snake will also be 60 degrees. Snakes, lizards, turtles, insects, fishes, and frogs are all cold-blooded animals.

Some people call cold-blooded animals ectothermic (ek-toe-THER-mik) animals. Ecto means outside, and therm means heat. Ectothermic animals get heat from outside their bodies. You may also hear people call them poikilotherms (poy-KEE-lo-therms). This is just a fancy word for a cold-blooded animal.

Cold-blooded animals are most active in warm weather. Cold weather slows down their muscles. That's why cold-blooded animals lay 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 or go in a burrow. 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 than warm-blooded animals.

Calling an animal cold-blooded may be a bit confusing. Next time you are talking about a "cold-blooded" animal, how about calling it an ectothermic animal or a poikilotherm? You may teach others a new word and teach them the true meaning of the term "cold-blooded."

SNAKES

SINISTER OR SACRED?

Throughout time, snakes have conjured deep feelings within people. Snakes have played many roles in myths, legends, and literature around the world. While some people may see snakes as evil, others see them as good. Snakes have represented both life and death.

Sometimes snakes are seen as a life force associated with water and the earth. Snakes live on land, in burrows and in water. Many people thought snakes were directly connected to water, rain, or the earth. Ancient Chinese thought that snakes brought life-giving rain. During a rainstorm, water would flood into snake burrows and force the snakes to crawl up on land. The people saw the snakes when it rained and thought the snakes were responsible for the rain falling. In Australia, India, Africa and North America, some native peoples connected snakes with rainbows.

As snakes grow, they shed their skin revealing a new skin underneath. Because of this, snakes have been seen as symbols of rebirth, immortality, and healing. Ancient Greeks respected snakes; they thought snakes were sacred. The Greek God Asclepius carried a staff with one or two snakes wrapped around it. This symbol, the staff wrapped in snakes, has become the symbol for doctors today. Both Ancient Greeks and Egyptians thought the snake

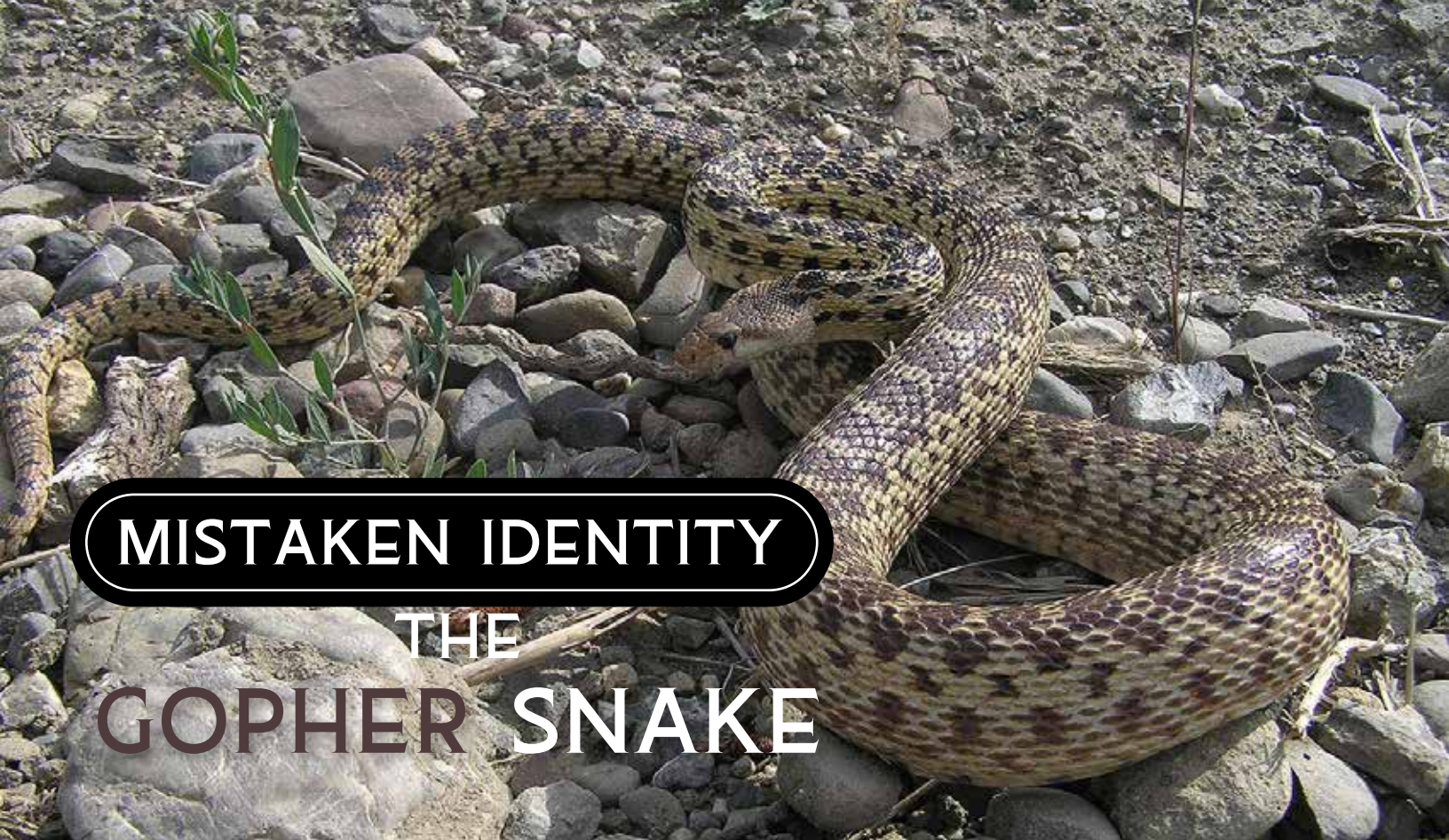
represented ever-lasting life. The Greek symbol for eternity is a snake curled into a circle biting its own tail.

Sometimes snakes are seen as frightening or evil. They are often portrayed as enemies of humans or keepers of the underworld. Maybe this is because some snakes are venomous, and their bites are dangerous. Snakes are often depicted in Aboriginal paintings in Australia. Australia has some of the deadliest snakes in the world. In Norse mythology, the monster Nidhogg, or dread biter, was an evil serpent. It coiled around one of the roots of the World Tree. Nidhogg was forever trying to kill the tree by biting or squeezing the roots.

In medieval Europe, people were told tales of the basilisk. The basilisk could kill people just by looking or breathing on them. The basilisk was also used in the book *Harry Potter and the Chamber of Secrets* to do the bidding of the evil Lord Voldemort.



Snakes have played many roles in myths, legends, and literature – some good, some bad. No doubt these stories have influenced people's feelings toward snakes. How do you feel about snakes?



MISTAKEN IDENTITY

THE GOPHER SNAKE

Idaho is home to a large, beautiful snake that is tan to yellowish in color with squarish brown or black blotches on its back. When frightened, this snake can look pretty scary by puffing up its body, hissing and vibrating its tail. But it's not a rattlesnake! This is a harmless gopher snake pretending to be a rattlesnake to scare away danger.

Gopher snakes get their name because they often live in rodent burrows. This makes sense because they eat a lot of small mammals like mice, rats, gophers, ground squirrels and voles. These rodents can be real pests for farmers, ranchers and homeowners. Having a gopher snake or two around can really help keep down the rodent population. These snakes are also important food for other animals like hawks, owls, coyotes and badgers.

Unfortunately, gopher snakes are often mistaken for rattlesnakes. Their looks and defensive behavior can seem scary. People assume they

are dangerous and kill them. So how can you tell rattlesnakes and gopher snakes apart?

In this issue of Wildlife Express, you learned how to identify a rattlesnake. Unlike rattlesnakes, gopher snakes are long and slim with shiny scales. Their head is oval-shaped, not triangular. They have large eyes with round pupils. A black stripe runs across the gopher snake's head and down across each eye. A gopher snake's tail ends in a point with no rattles. The snake can make a rattling sound when vibrating its tail against dead leaves. This sound can be startling, but that's the point! It keeps danger away.

Both rattlesnakes and gopher snakes are important members of their habitats. They benefit people by eating a lot of rodent pests. While we might not want to hang out with them, they deserve to be left alone to carry out their important roles in nature. Learning to know the difference between these two species helps keep everyone safe, the snakes and people.

GO HERPING!



BE OUTSIDE
IDAHO CHILDREN IN NATURE

Have you ever heard of herpetology? 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.

It is fun to look for amphibians and reptiles and learn about what they need to survive. If you want to go “herping” and look for reptiles or amphibians, here are some things to keep in mind.

Be alert to the presence of rattlesnakes. If you think a rattlesnake might be nearby, go to a different spot. Use a good sturdy stick to flip things over. Many herps hide under rocks, logs, and leaves. Herps can bite! Use a net and wear thick leather gloves when handling animals and *never handle a rattlesnake!*

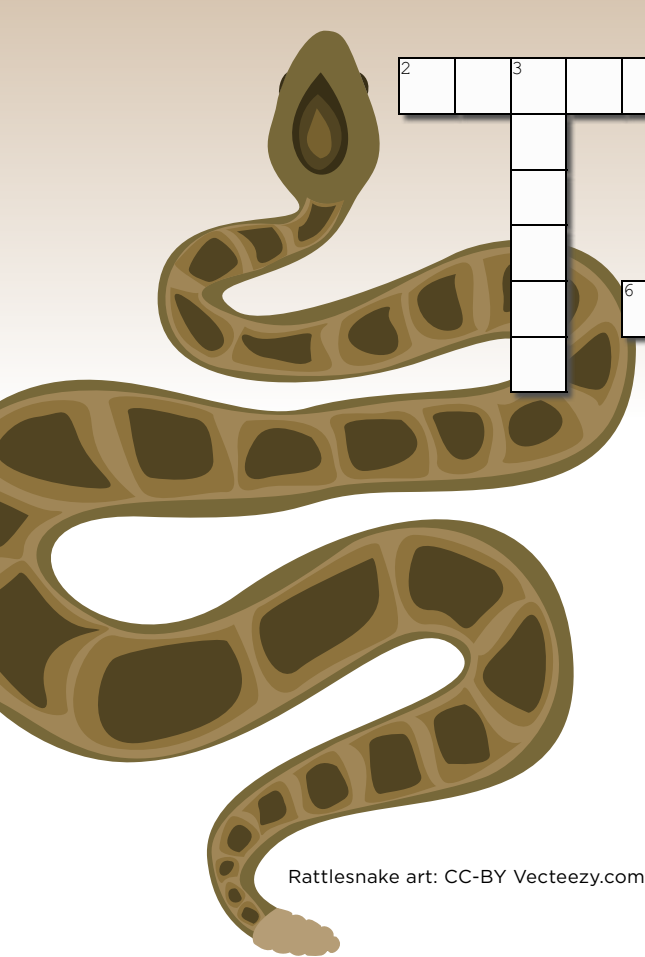
Photo: CC-BY James Hall at Flickr.com

If you would like to get a closer 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. Once you are done looking at your herp, put it back where you found it. Although it may seem fun to keep herps as pets, it can be tricky keeping them alive. Wild animals belong in the wild.

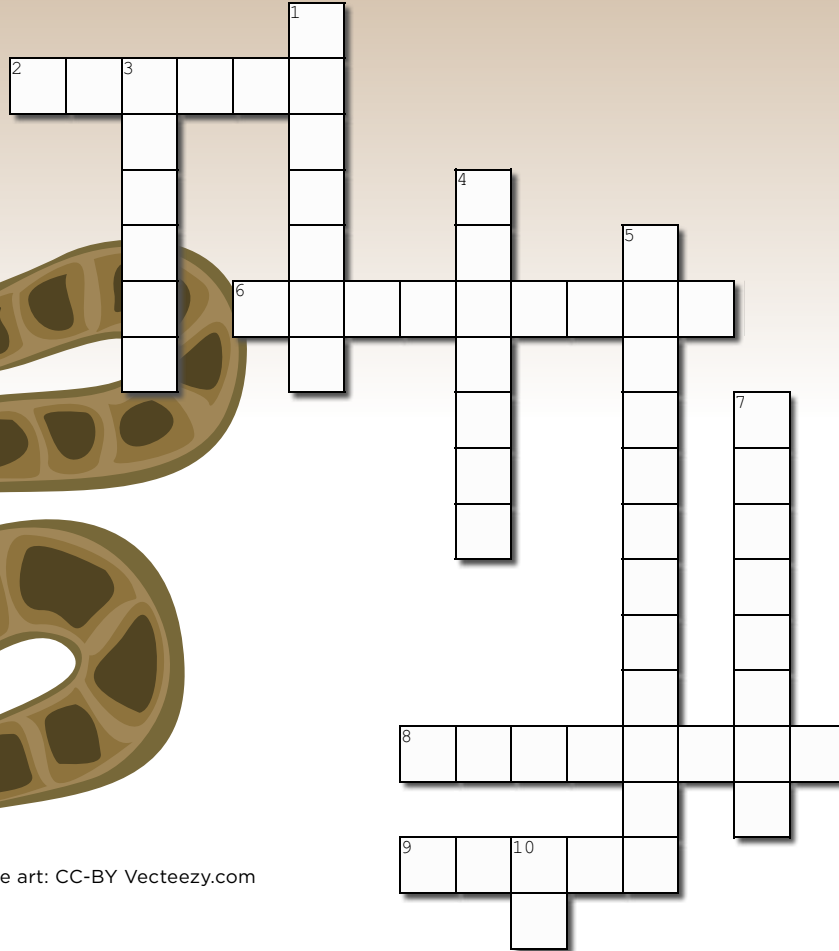
Spring is a great time to listen for frogs and toads living in quiet ponds, marshes or along lakeshores. This is their breeding season. Males sing to attract females. Their funny croaking and trilling sounds might not sound like singing to us, but it does to the females! Early morning and evening are the best times to listen for frogs and toads.

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

IDAHO'S RATTLESNAKES



Rattlesnake art: CC-BY Vecteezy.com



Created using the Crossword Maker on TheTeachersCorner.net

Across

2. Rattlesnakes don't have one when they are born.
6. The word used for a snake's hibernation.
8. The name for a baby rattlesnake.
9. This has toxic effects on an animal's body.

Down

1. This is the most common rattlesnake in Idaho.
3. This is used to help a snake pick up scents.
4. This rattlesnake is found in east-central Idaho.
5. A fancy word meaning a cold-blooded animal.
7. Snakes store this in their muscles and liver to survive winter.
10. Can you tell a rattlesnake's age by the number of rattles on its tail?

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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!
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