

# NATURE DETECTIVES

Spring 2008

## Tiger Salamander Heads to Her Pond

The spring rain was gentle and would continue most of the night. Tiger salamander was waiting for a March evening like this. Along with other nearby salamanders, she slithered over leaves and rocks to make her way back to the water where three years earlier she had hatched from an egg. Now her eggs would begin a new generation of tiger salamanders in the same pond. The raindrops would keep her skin moist and the darkness would hide her and the other salamanders from enemies as they traveled.



Tiger salamanders are at home on land and in the water. Although the adults may live on land, they always return to water to find mates and lay their eggs. Yet, their name "salamander" is from the Greek language and means "fire animal." Hundreds of years ago the name was first given to a type of salamander in England, where people believed for centuries that these moist, slimy critters were born in fire. Fire is the opposite of water. How could such a strange mistake happen?

### Salamanders – Born in Water, Not in Fire!

As late as the 1400's, much of life was a mystery to people, especially the lives of wild animals. When ancient people put damp logs on the fires they used for heating and cooking, salamanders sometimes scurried out of the fireplace. The salamanders had been using the old logs as moist shelters on the forest floor. When fires drove them out of hiding, it looked like they had been born in the flames. Back then people thought such things were possible. Storytellers even entertained listeners with magical tales of salamanders that grew into fire-breathing dragons. Eventually people had a better understanding of salamanders, but everybody was used to the name. So salamanders, including our tiger salamanders, are stuck with a silly name for an animal that makes its home in habitats that are cool and wet.



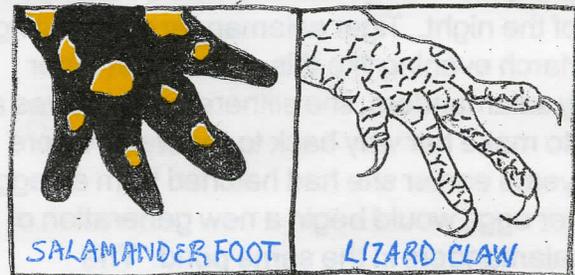
### Spots or Blotches, Maybe Bars, but Not Really Tiger Stripes

The "tiger" part of their name seems as silly as being called "fire animal." Tiger salamanders can have yellowish spots or bars on dark skin. Some are dark with dark spots or blotches and some are lighter colored. Colors seem to vary with the salamander's surroundings and age, but they never have tiger-like stripes.

## Tiger Salamander (*Ambystoma tigrinum*)

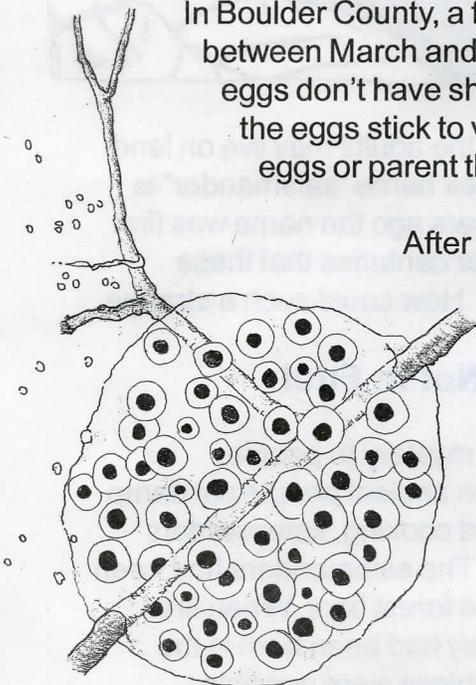
Salamanders are shaped a little like lizards. They have a long body and a long tail. Tiger salamanders can grow to be 13 inches long.

Salamanders are not lizards. Lizards are reptiles with dry, scaly skin like snakes and turtles. Lizards have claws on their toes and live on land. Salamanders are amphibians like frogs and toads, which means they live at least part of their lives in water. Salamanders have moist, slimy skin and no claws. They have four short legs (legs so short their bellies scrape the ground) with four toes on their front feet and five on their back feet. Their mouth shape makes them look like they are smiling.



### Salamander Life Cycle

In Boulder County, a female tiger salamander will lay around 400 eggs sometime between March and May. She lays the eggs one by one or in small clusters. The eggs don't have shells like bird eggs but are surrounded by a clear jelly that helps the eggs stick to vegetation, twigs or rocks. Salamander adults do not guard the eggs or parent the hatchlings.



After two to five weeks, the eggs that have escaped being eaten by ducks or other critters hatch into dull-colored larvae (baby salamanders) with finned tails that propel them through the water. They look a lot like frog tadpoles. They have fringelike gills that absorb oxygen from the water, and their moist skin also absorbs oxygen. As the larvae mature, they grow legs. They usually are active during the day. At night they hide in vegetation or in deeper water. Food is anything they can capture and swallow. They eat insects, fairy shrimp, amphibian eggs and larvae such as tadpoles and even other salamander larvae. Before salamanders leave their watery home for a home on land, they develop lungs and eyelids. Their gills go away and their tails lose their swim fins. The complete change from

egg to land animal is called metamorphosis.

The time it takes for a salamander larva to metamorphose into a land-dwelling adult can be a couple weeks or in some cases over a year or even two. Typically, salamanders in warmer water mature faster.

One strange thing about tiger salamanders is that sometimes they don't become land animals. Sometimes, especially in ponds high in the mountains, they live their whole lives in the water. They keep their gills and finned tails. The big surprise is that they can lay eggs even though they don't look like adult salamanders. Eggs of gilled adults hatch into larvae that can mature into regular land adults. Scientists are still studying why this occurs.

## Salamanders Hunt for Food and Shelter

Once on land, tiger salamanders spend most of their time hidden in places to keep their bodies moist and safe from predators. They need protection from the hot sun and freezing temperatures, too. (Like all ectotherms, they cannot create their own body heat so their bodies are the same temperature as their surroundings.)

Their favorite time to move around is at night, especially rainy nights. Their eyes help them see prey, but they don't see well. They are better at detecting ground vibrations. Their senses of smell and taste are important for identifying things to eat.

Each salamander is on the hunt for a meal of earthworms, large insects, small frogs, baby mice or any critter it can catch and gulp down with the help of small teeth along its jaws and across the roof of its mouth. They even eat their old skin. (Like snakes, salamanders shed their whole skin as they grow bigger.) Salamanders can survive quite a while without eating.

## Salamanders Try Not to Become Food

Owls, snakes, badgers and other predators are on the prowl for salamanders for dinner. The main salamander defense against predators is staying hidden, which is helped by their camouflage coloring.

If a predator does snatch them, salamanders produce a smelly, yucky-tasting slime on their bodies in hopes of escape.



Salamander eggs and larvae are eaten by garter snakes, gulls, herons and other birds, trout and other fish, and raccoons. Turtles, frogs, other salamanders, and even giant water bugs and diving beetles also hunt larvae. In shallow water, salamander babies can fall prey to birds such as killdeer, grackles, gray jays and ravens, as well as coyotes and bobcats.

## Borrowed Burrows for Shelter

Tiger salamanders spend the winter in burrows made by mice or other rodents, ground squirrels, rabbits or any burrowing animal. They usually spend the months of December through February sleeping below ground. Underground burrows are a good place for them to avoid hot dry summer days, too. Salamanders can dig shallow burrows themselves that they use for short-term shelter or hiding. Sometimes people find them in basement window wells.

## Finding Tiger Salamanders

Salamanders are most active on land in rainy weather. From March into November, look in damp areas under rocks or logs in salamander habitat, which is most anywhere near water. They are more likely to be found close to water that doesn't have fish big enough to eat them. They can be found from the plains to southwest mountain habitats as high as 12,000 feet.

The best chance of finding them is at night. Putting red cellophane or plastic wrap over a flashlight helps you see the salamander with light in a color their eyes cannot detect.

Lakes, marshes, even big puddles can be home for baby salamanders. Look for dull-colored salamander larvae in sunny, shallow water during the day, but you have to be sneaky to see them. Mud and vegetation make good hiding places for startled larvae.

Remember, when you are hunting for salamanders or just exploring, always put rocks or logs that you turn over back in the position you found them. The undersides of these things make cozy habitats for all kinds of creatures, many we can't even see.



## Bedtime Read Aloud Book

It is tempting to try to keep a salamander as a pet, but you can never create surroundings that will keep wildlife comfortable. The book The Salamander Room by Anne Mazer is a beautifully illustrated story of a young boy who imagines trying to make his room into a good home for his wild pet. Even if the boy could succeed in the impossible task of turning his room into a forest, his captive salamander would not feel safe. Salamanders are shy of people and prefer to stay out of sight in their outdoor habitats.