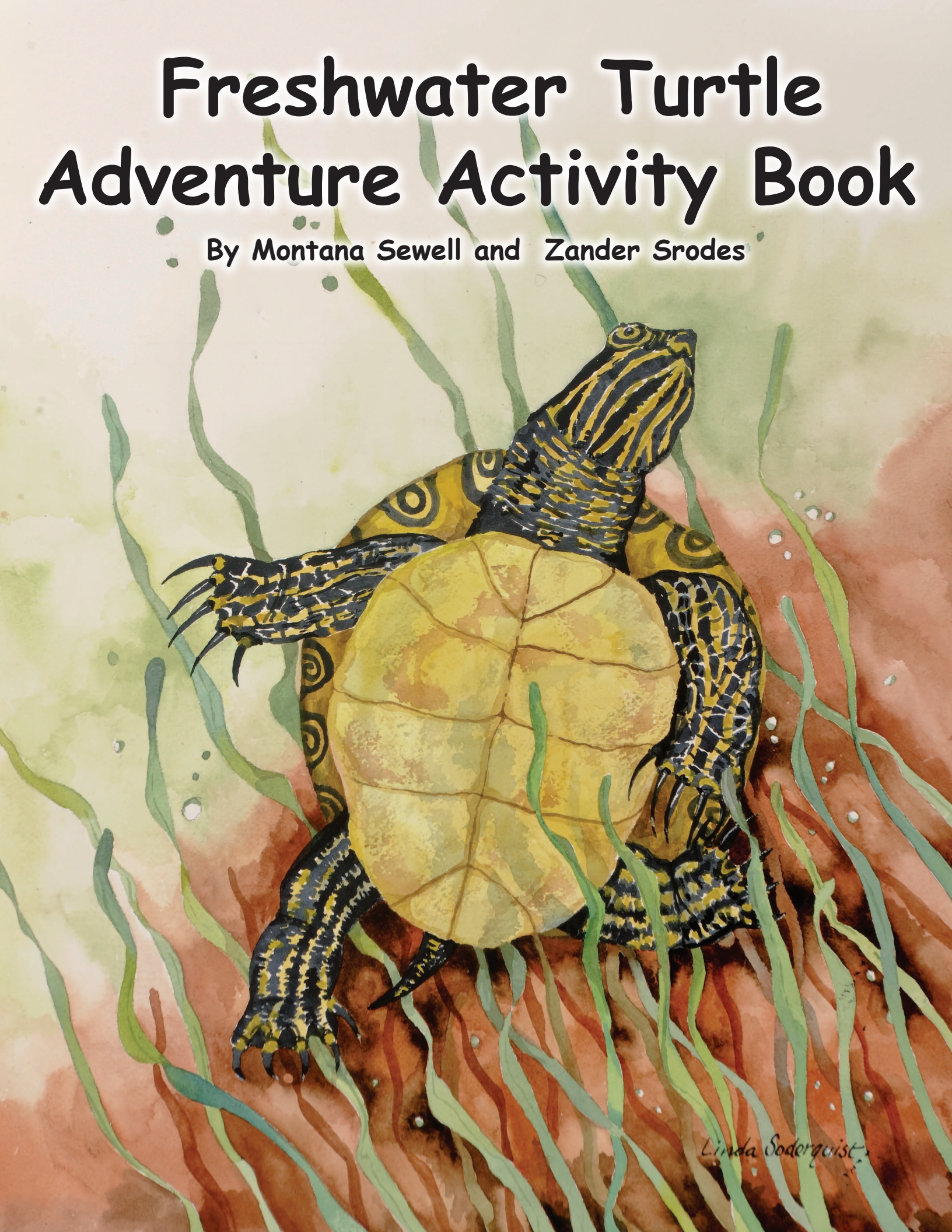
Freshwater Turtle Adventure Activity Book

By Montana Sewell and Zander Srodes



About the Authors

Montana Sewell was born and raised in Gainesville Florida. She wrote the *Freshwater Turtle Adventure Activity Book*, when she was a fifteen year old high school student. Montana, now sixteen is currently a dual enrollment college student at Santa Fe College. She is the youngest of seven children and Zander Srodes is her cousin. She aspires to be a writer, when she grows up.

Zander Srodes grew up on Palm Island, a bridgeless, barrier island on the southwest Florida coast. When he was 11 years old, he began giving "Turtle Talks." A conservation presentation on sea turtles, at schools, libraries and nature events. Zander has written *Turtle Talks* and *The Gopher Tortoise Activity Book.* He has received numerous awards for his outreach efforts. He attends college in Florida. Zander is an intern with the Sea Turtle Conservancy and SEE Turtles.

About the Illustrator

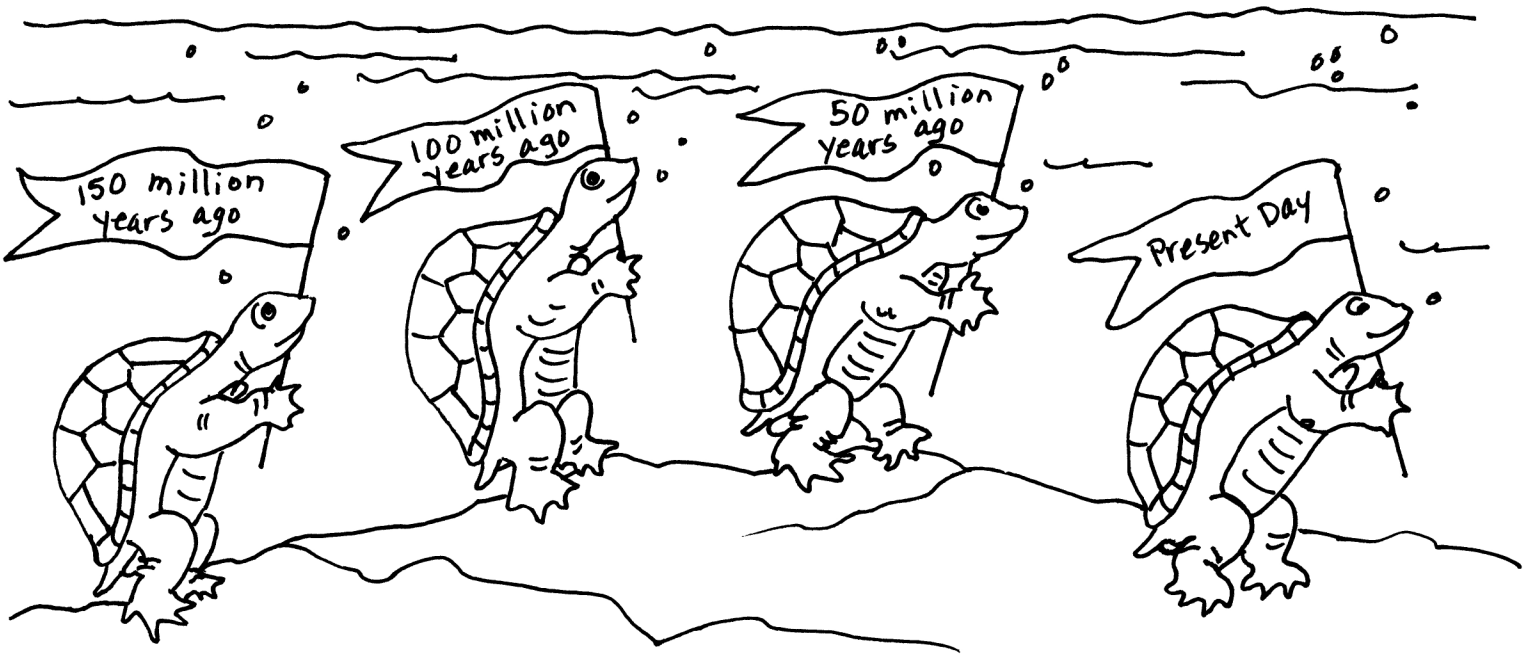
Linda Soderquist lives with her family on Little Gasparilla Island, another bridgeless, boat access only island off southwest Florida. As the state's Principal Permit Holder for sea turtle monitoring activities on the island, she is responsible for collecting nesting data, investigating disorientation incidents, and gathering information on strandings of dead or debilitated sea turtles. Linda is a watercolor artist who regularly shows her work in galleries and exhibits, and has recently retired from teaching elementary students in Venice, Florida. She continues to work with youth groups and adults, creating awareness for environmental issues.

Freshwater Turtles

Turtles have wandered the earth for over than 200 million years. They have been on the planet since the time of dinosaurs. Present day turtles remain unchanged from their ancestors that lived more than 150 million years ago during the Jurassic period.

Today, more than 300 species of turtles inhabit the planet and most dwell in fresh water. There are around 50 different species that are found in North America.

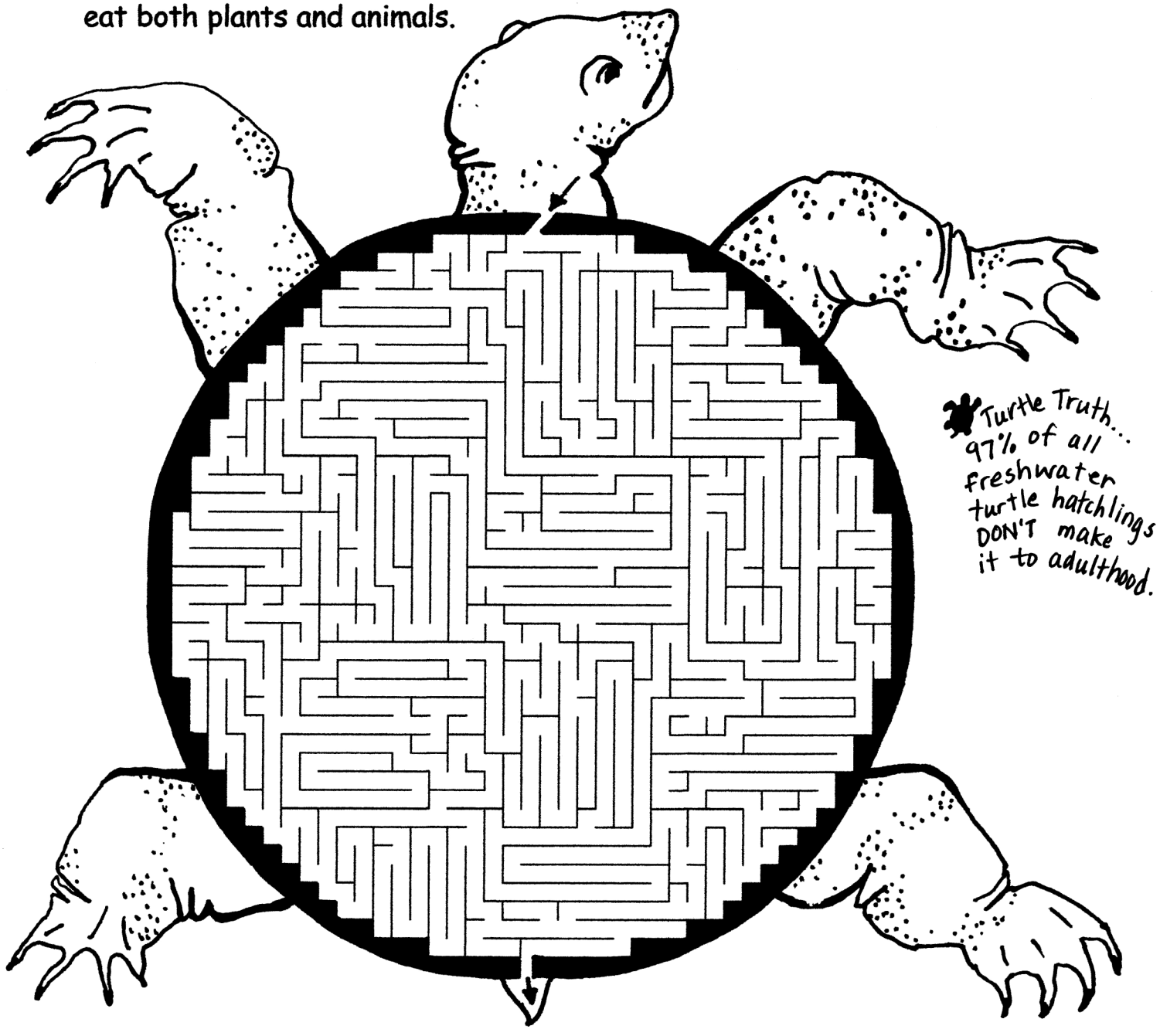
Most freshwater turtles spend time during the day lazing in the sun together. They bask on top of each other, along sandy river banks, on floating logs, and on top of rocks. Even though turtles are aquatic, as reptiles they have to breathe oxygen. Freshwater turtles occasionally float just under the surface of the water with their nostrils barely above the surface. Different species of turtles prefer to live in different environments. Some prefer to swim in a moving current. They dwell in muddy or sandy bottoms, and in either vegetated or open bodies of water. Even though they live in diverse environments, they share a similar physical structure. The minor differences in their appearance help with their identification.



Turtle Habits

Nearly all turtles spend some of their day underwater where they swim, seek out food, or sleep. Some turtles are very closely linked to water plants. They eat water plants, sleep in them, and hide behind them for protection. Some turtles are even camouflaged to look like plants. The spotted shell of one turtle looks like the duckweed plant. Flying bugs will land on this turtle's shell and become its food.

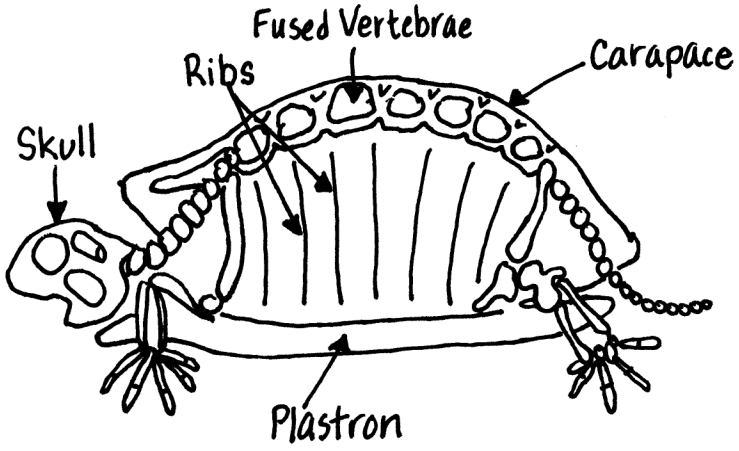
Some turtles species are carnivores eating crayfish, fish, and insects. Vegetarian species eat plants and algae. Several are omnivores. They eat both plants and animals.



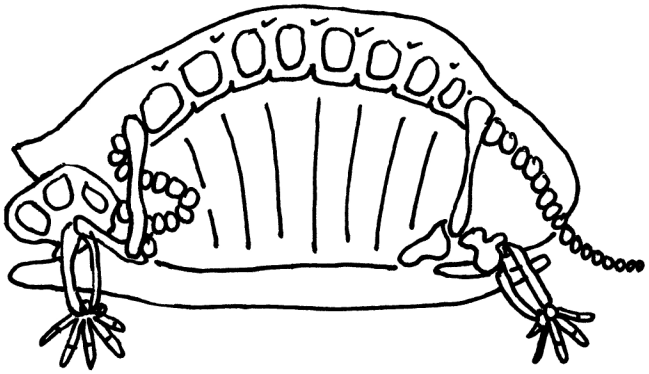
Anatomy of the Turtle

The upper part of the turtle shell is called the carapace and the underside is known as the plastron. The carapace is sheltered with small plates named scutes. The ridges on the tail or shell are called the keel. The keel and the scutes cause the turtle shell to look like armor. One reason that turtles lie around in the sun each day is to keep the scaly skin on their legs and head dry. Sunning also helps their shells stay hard.

The head of the turtle doesn't contain external ears, so turtles do not hear airborne sounds as loudly as humans do, but they can sense and interpret vibrations in the environment. Hearing probably isn't very important to the turtle though, because their senses of vision and smell are excellent. The nostrils are located on top of the snout, so the turtle can be almost completely underwater and still be able to breathe. Turtles are the only toothless reptiles. However, with their sharp beak-like mouth, they are able to cut through plants and prey. Aquatic turtles have flat feet, webbed toes, and sharp claws. They are excellent diggers and can easily use their claws to shovel dirt.



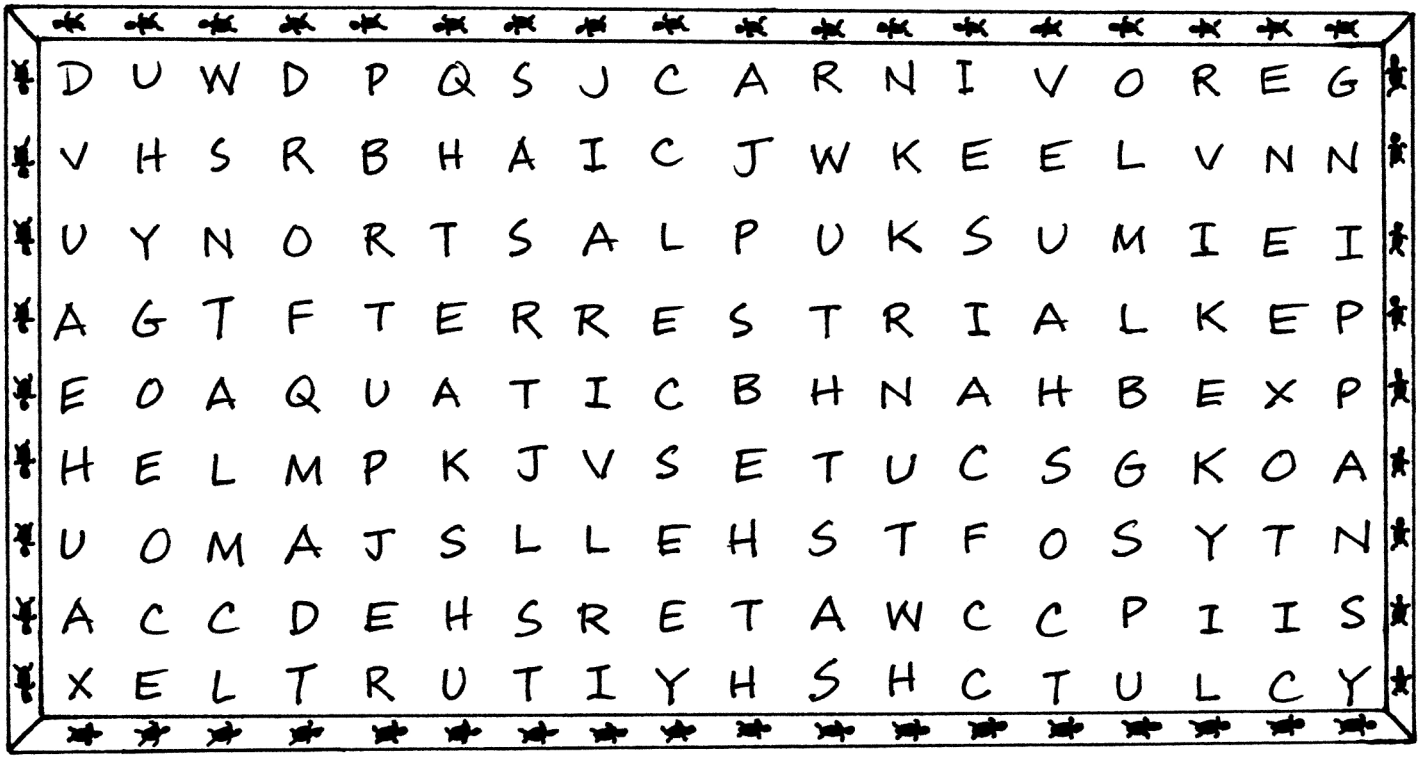
Trace the vertebrae from the skull to the tip of the tail.



See how the turtle can pull its head into its shell?

The Life Cycle

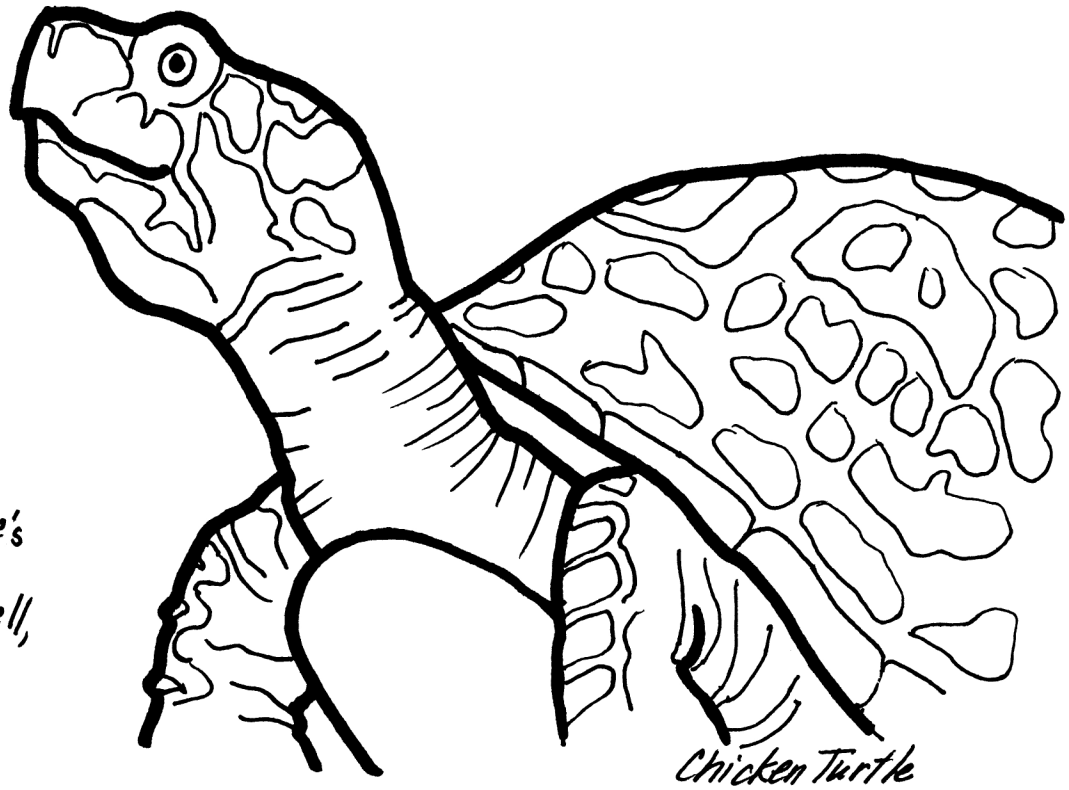
All turtles lay their eggs on dry land. A female turtle will dig a burrow, lay her eggs, cover the nest with dirt, and then return to the water. The mother turtle will never return to her nest. The eggs will then incubate. When the eggs hatch, the baby turtles will claw their way out through the soil to the surface. The hatchlings will rely on their instincts to guide them to the water. The numerous predators in their path to the water include birds, snakes, alligators, mammals, and humans.



AQUATIC
BASK
CARAPACE
CARNIVORE
CLUTCH
ECOLOGY
EXOTIC
HATCHLING
JURASSIC
KEEL
MUSK
PLASTRON
SCUTES
SNAPPING
SOFTSHELL
TERRESTRIAL
TURTLE
WATERSHED

Chicken Turtle

Chicken turtles can grow to a whopping ten inches long. These turtles have yellow markings on the carapace, while the plastron is completely yellow. They prefer to live in shallow ditches and ponds that have thick vegetation. They may be found relaxing on logs or even exploring the banks. These turtles are very feisty and will bite. The meat of this turtle is eaten by some people in the Southern states.



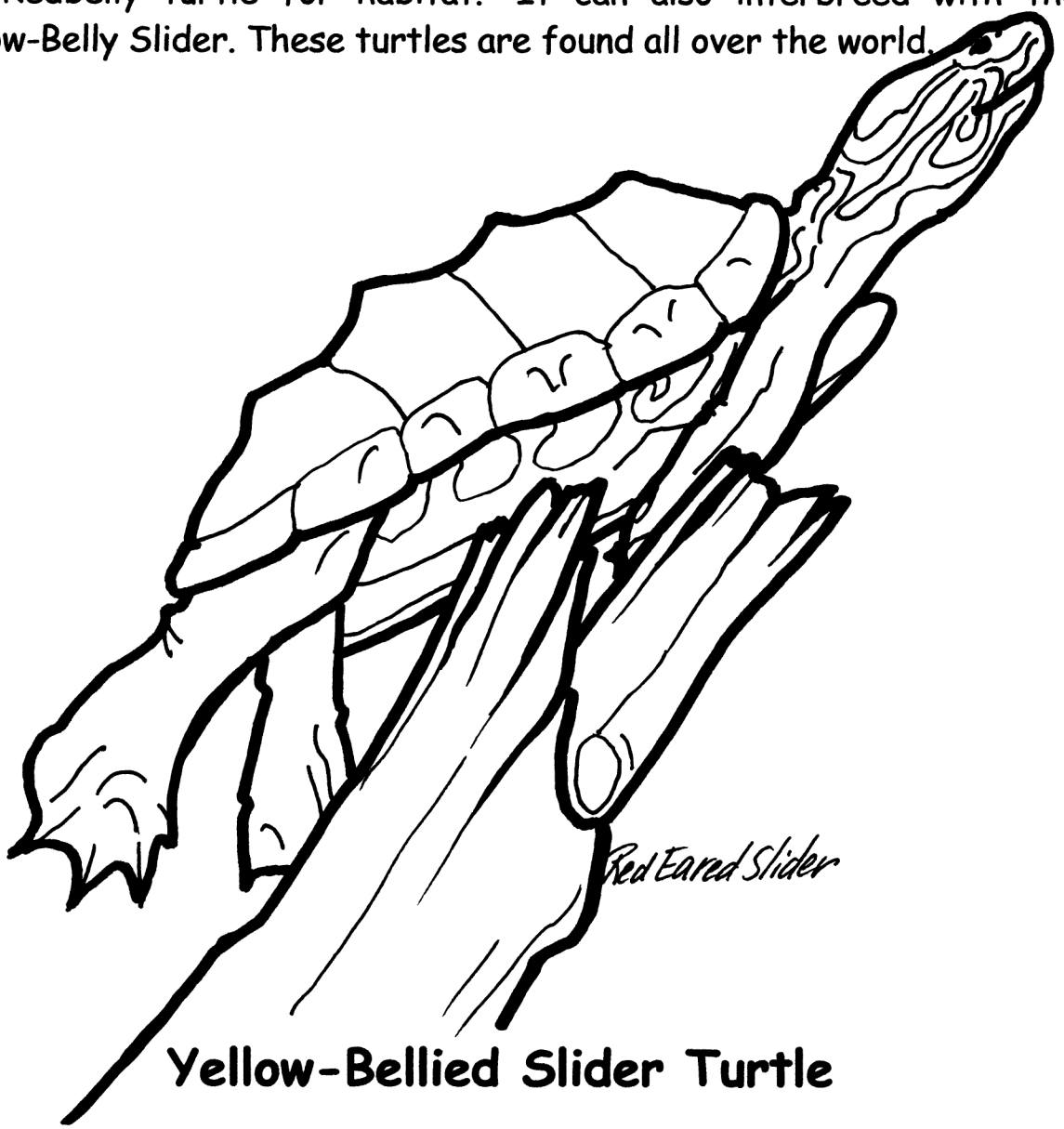
Turtle Truth...
Do not paint a turtle's shell. The paint may deform the turtle's shell, causing it to die.

River Cooter Turtle

The River Cooter is around ten inches long. Their shells are brown or olive and contain creamy yellow lines. They like springs or rivers that have moderate currents. They relax on logs, but when approached they are quick to dive into the water. River Cooters are herbivores, feeding on native water plants such as duckweed, water lettuce, and parrot feather.

Red-Eared Slider Turtle

The Red-Eared Slider is a subspecies from the Mississippi river basin. It was introduced and sold in pet stores to children in Florida. After making its way into the eco-system of Florida, it now competes with the Redbelly turtle for habitat. It can also interbreed with the Yellow-Belly Slider. These turtles are found all over the world.

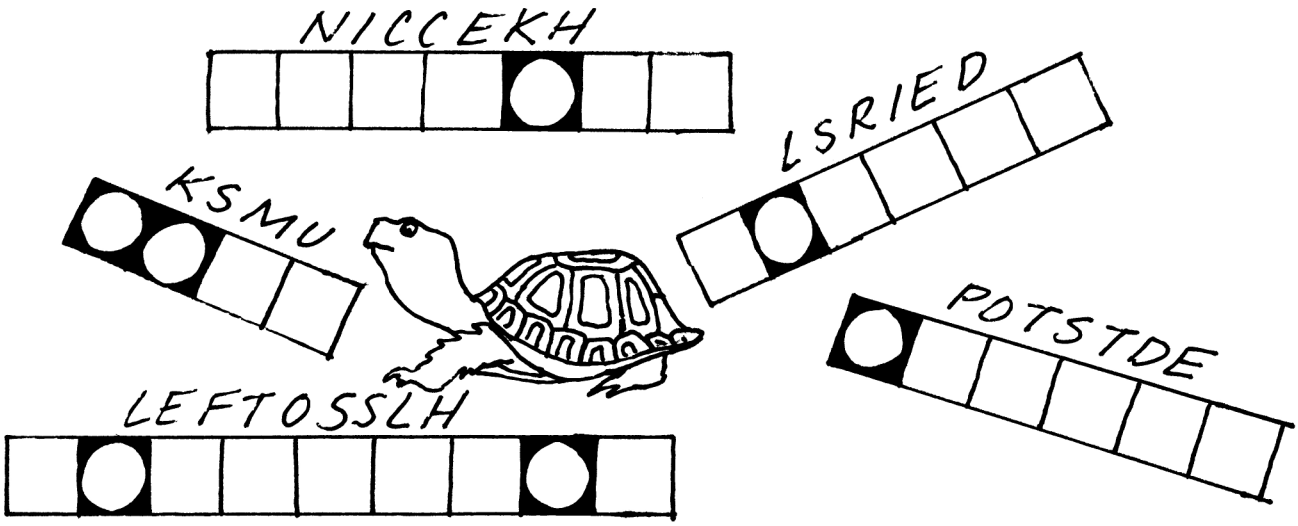


Yellow-Bellied Slider Turtle

The Yellow-Bellied Slider turtle will grow to about eight inches long. These turtles are black with yellow bands on the sides. The Yellow-Bellied Slider can be found in aquatic areas that have soft bottoms with dense vegetation.

Escambia Map Turtle

This turtle is found only in the Escambia River system of the western panhandle in Florida. These turtles prefer waters with moderate to fast currents, tree branches for basking, and wide sandbars. Basking is an important part of the daily activity of map turtles; therefore good sunning branches will increase the number of turtles that inhabit an area of a river. They are extremely wary while basking and will plunge into the water at the first sign of danger. They mainly feed at night. The adult females have large jaws and feed on freshwater mollusks and crayfish.



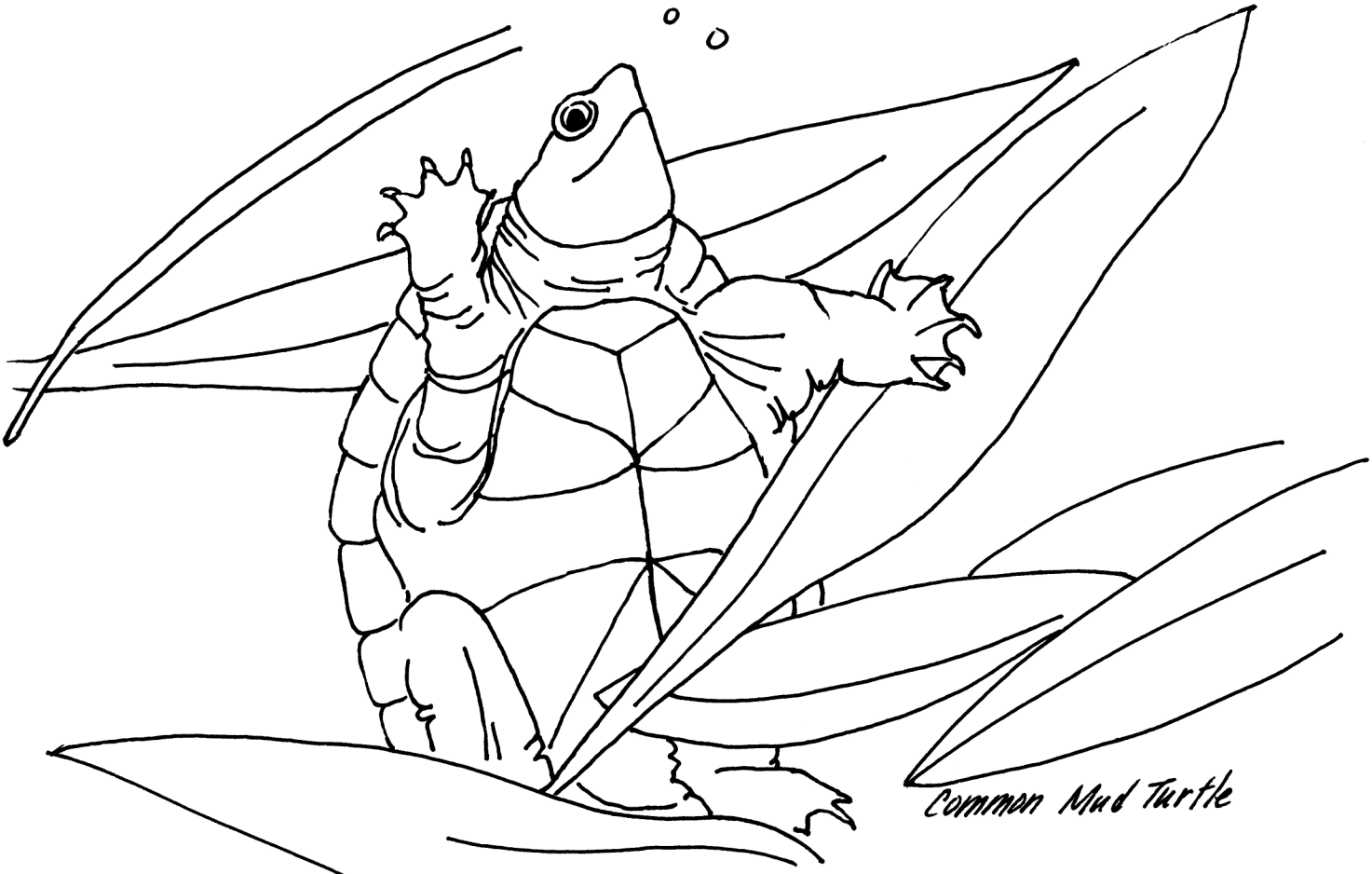
Unscramble each of the clue words, which are names of freshwater turtles. Take the letters that appear in the ■ and unscramble them. Discover a tasty dinner for some freshwater turtles. What is it? _____

Barbour's Map Turtle

A male Barbour's Map turtle will only grow to be five inches long, but females can reach twelve inches. The population has dwindled, as a result of people collecting them. These turtles are found in the Chipola and Apalachicola Rivers. The shell color varies from olive grey to brown, and has yellow "U" shaped markings. They eat insects, snails, and crayfish.

Common Mud Turtle

The Common Mud turtle is known for being very small, rarely growing to be four inches long. The head of the turtle is black with two thin yellow lines. The shell color can vary from shades of olive green to brown. These turtles live in fresh marshes and ponds. Common Mud turtles eat insect larvae and other tiny aquatic animals.



Striped Mud Turtle

The Striped Mud turtle got its name because it has three light stripes on its smooth shell. This turtle grows to be only four inches long. This species is the most land-loving turtle of all mud turtles. The Striped Mud turtle can be found in puddles or small ponds. It will feed on snails, insects, dead fish, and some vegetation. The Striped Mud turtle is also known as the "Cow Dung Cooter" because occasionally it can be seen foraging in cow manure.

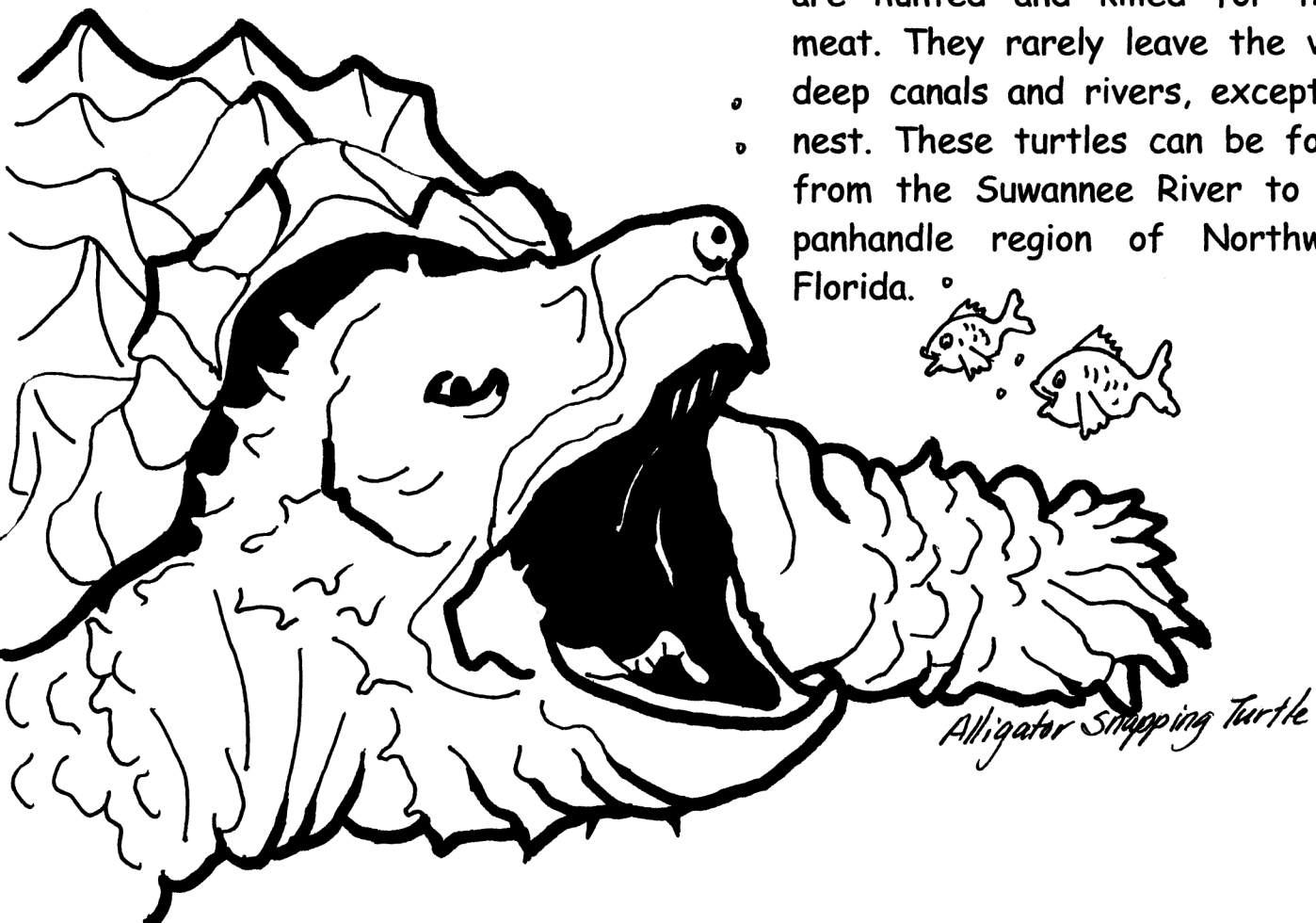
Turtle Truth... The stripes on the Striped Mud Turtle fade as the turtle ages.

Snapping Turtle

Snapping turtles can weigh up to 60 pounds. They can live 40 to 50 years. Their shell color can be extremely dark brown or black. The turtle's large head is supported by its very long, bumpy neck. They will catch and eat fish, frogs, toads, crayfish, snakes, and even birds! The Snapping turtle rarely leaves the water except to nest. Snappers sometimes float along on the surface of the water in the sunshine. They stretch out their legs as far as possible. This is called aquatic basking.

Alligator Snapping Turtle

Alligator Snapping turtles are the largest freshwater species in North America and one of the largest in the world. They can weigh up to 250 pounds. Alligator Snapping turtles look more like dinosaurs than turtles. They have bear-like claws and long spiky tails. These turtles have a worm-like structure that dangles from the mouth. This built-in fishing lure attracts curious fish into their mouths. They are a slow growing species and live a long time. This is a species in decline because they are hunted and killed for their meat. They rarely leave the very deep canals and rivers, except to nest. These turtles can be found from the Suwannee River to the panhandle region of Northwest Florida.

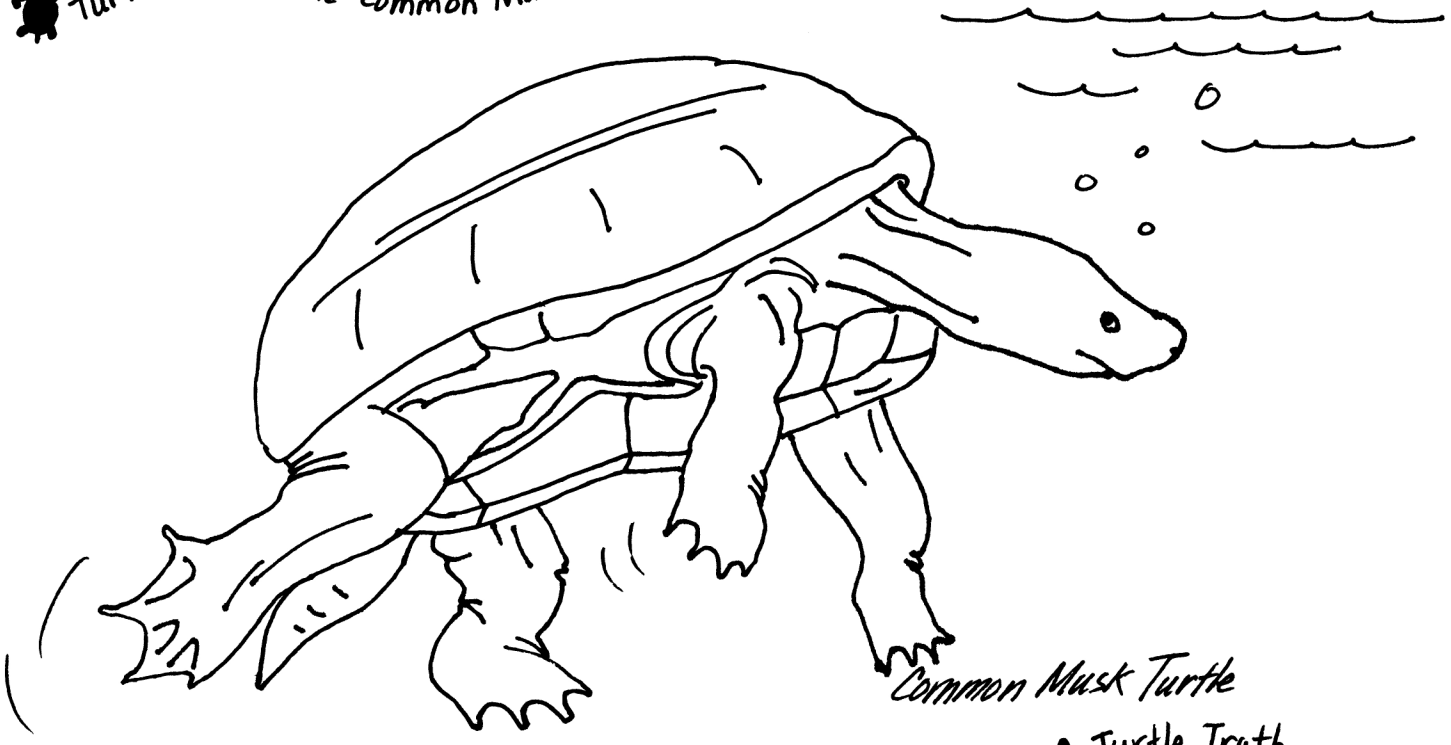


Alligator Snapping Turtle

Common Musk Turtle

The Common Musk turtle is also known as the "Stinkpot." The average turtle will only reach five inches in length. They have grey to brown covered shells, which are smooth and often covered with algae. If the turtle is harassed it will exude a foul musk-like odor. Common Musk turtles prefer slow-moving ponds and streams. These turtles rarely come to land, but they occasionally may be seen stretched out on low trees limbs and logs.

Turtle Truth... The Common Musk Turtle is relatively harmless, but it can bite!



Common Musk Turtle

Loggerhead Musk Turtle

Turtle Truth... Loggerhead Musk Turtles are very stinky!

The Loggerhead Musk turtle grows to be about five inches long. The shell may be patterned with spots or streaks that range from brown to orange. The plastron will vary from pink to yellow, while the head may have dark spots or stripes. Loggerhead Musk turtles can be found in springs, sinkholes, rivers, and swamps. The name Loggerhead may be due to the fact that adult males develop large powerful jaws which help in the crushing of one of their favorite foods, mollusks. The shell is shaped like a saddleback so it can retract its large head.

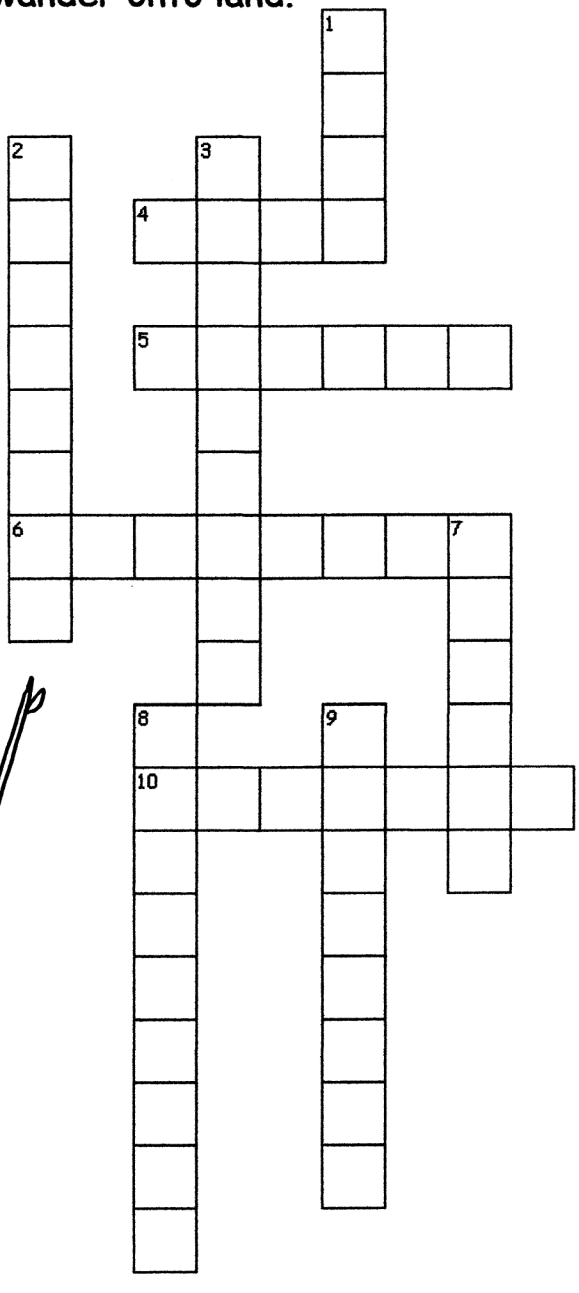
Turtle Truth...the word "cooter" comes from the Latin word "kuta" which means turtle in many African dialects.

Florida Redbelly Turtle

Florida Redbelly turtles can grow to be about ten inches long. The black carapace has red-brown bars and the plastron is red. Their heads are black with narrow yellow stripes that shape into an arrow on the snout. Florida Redbelly turtles eat marine plants located in ponds, marshes, lakes, and mangrove lined creeks.

Common Cooter Turtle

The Common Cooter averages around twelve inches in length. They are black or brown with yellow stripes down their shells. These turtles prefer dense aquatic vegetation in ponds, marshes, rivers, and spring runs. The Common Cooter will occasionally wander onto land.



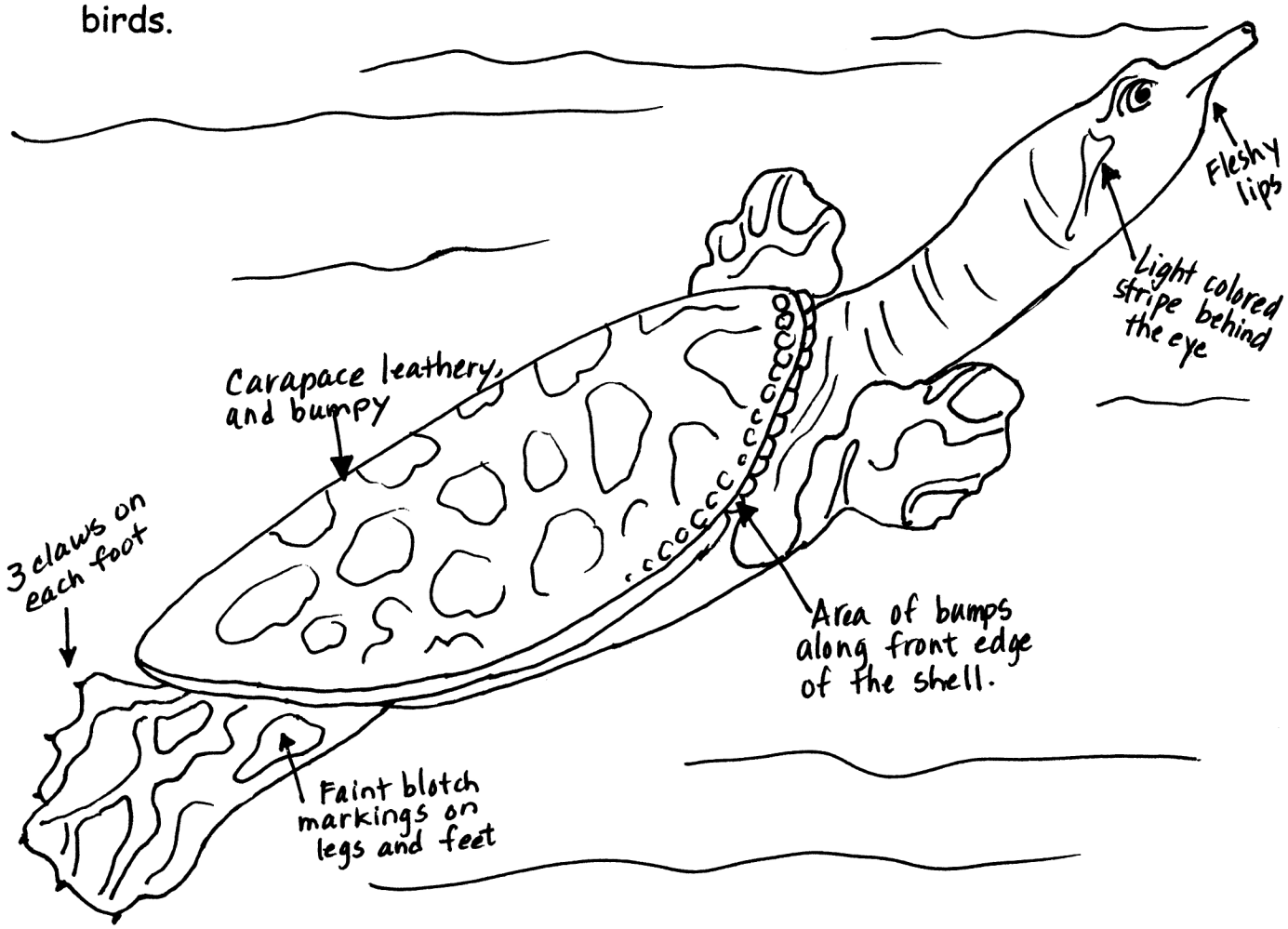
Across
4. lay in the warmth of the sun
5. scales on a turtle's shell
6. will eat both plants and animals
10. water plant or animal

Down
1. stinky secretion from some turtles
2. underside of a turtle
3. baby turtle
7. brought from another place
8. eats other animals
9. hard shell on the back of a turtle

Turtle Truth... Cooters are frequently eaten in the South.

Florida Softshell Turtle

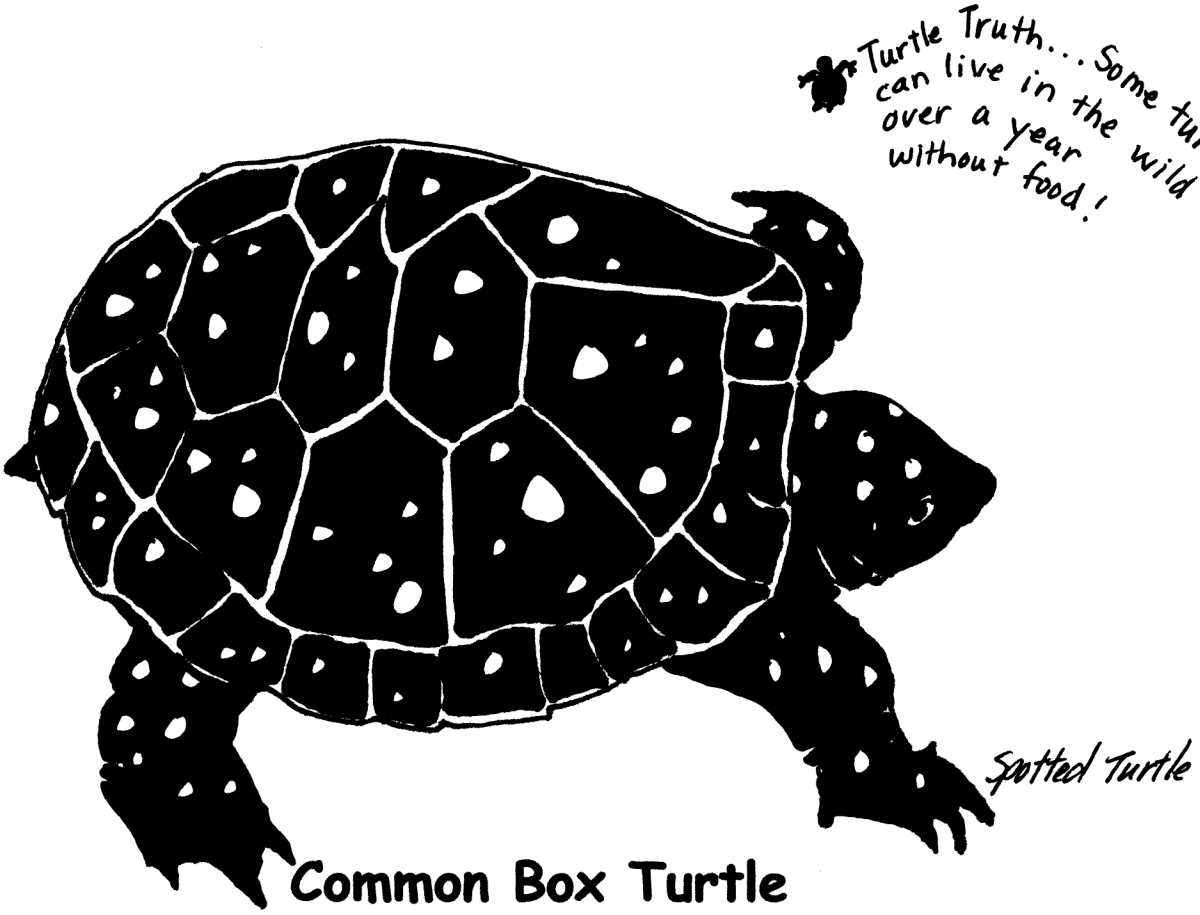
The male Softshell turtle grows to eight inches long, and the female can reach sixteen inches long or longer. They are able to reach a hefty 35 pounds. The shell is actually hard, covered with a leathery skin, while the edge of the shell is soft. These turtles are hunted and eaten by some people. Softshell turtles prefer lakes, canals, and springs with sandy or muddy bottoms. They can be found either floating just under the surface, or buried in the muddy or sandy bottoms. Florida Softshell turtles eat snails, amphibians, crayfish, and occasionally small birds.



Turtle Truth... Florida Softshell turtles are known for their extremely long necks and their ugly tempers - their heads can reach around and pinch the person holding them.

Spotted Turtle

Spotted turtles can grow to be five inches long. These turtles are very rare. Spotted turtles have a smooth shell, their legs and head are black with orange or yellow spots, and their underside is cream colored. The males have brown eyes, while the females have orange eyes. They can be seen idling along in slow moving streams and in shallow woodland ponds in northern Florida. They can be found on land as well.



Common Box Turtle

The Common Box turtle is mainly terrestrial, although it may be found in wet meadows and floodplains. They will grow to nearly six inches long. Their shells will either be tan, brown, yellow, or orange. The males have red eyes, and the females have yellowish eyes. Box turtles feed on slugs, worms, strawberries, and mushrooms. These turtles have been known to live to be 100 years old. Female Box turtles will produce one to five eggs in a single clutch. The Gulf Coast Box turtle is a larger species and can reach nine inches long.

Freshwater Turtles Are Threatened

Many Florida turtles are now classified on the Endangered Species List, as "threatened." There are many reasons why the populations of turtles have dropped, including: loss of habitat, polluted water, and invasive water plants. These are a result of the increase in the human population in Florida. The building of new houses and businesses has destroyed habitat and made the home range for turtles and tortoises more limited. Turtles need clean water. They depend on healthy springs, rivers, swamps, marshes, lakes, and ponds for their homes and food supply. Exotic aquatic plants from other areas can take over where native plants once lived. These exotics may not be a good food source for turtles and will limit their diet. Just because you see turtles swimming in the water near where you live, doesn't mean that they are native species. The non-native Red-Eared Slider, has become common and has overrun the habitat of native turtles. This has resulted in the loss of territory for local species and caused the native turtles to decline in numbers.

In addition to expanding development, polluted water, and non-native plants putting the survival of turtles at risk, there is also a serious concern that catching and taking turtles from the natural environment has caused the turtle community to dwindle. Recently, the Florida Fish and Wildlife Conservation Commission put into action a ban to protect fresh water turtles from being caught and exported for food. Additional dangers to turtles are cars on the roads and hunters shooting at basking turtles.



Glossary

Aquatic	A plant or animal that lives or grows in water
Bask	To lay and enjoy the warmth of the sun
Carapace	The thick hard shell that covers the back of a turtle
Carnivore	An animal that eats other animals
Clutch	A group of eggs
Ecology	The study of the relationship between living organisms and their natural and developed world
Ecosystem	A system formed by the interaction of a community of organisms with their environment. The natural world influences the life of people, plants, and animals. The choices that humans make can change the natural world.
Exotic	A plant or animal brought in from another place or region
Export	A product sold and transported to another country
Floodplain	An area of low land across which a river can flow; can have frequent flooding
Hatchling	A baby turtle that has just hatched from an egg.
Incubate	A warm environment for eggs, so the embryo inside can develop and hatch
Invasive	New species that grow aggressively and prevent the growth of native plants and animals that are already present in an area
Jurassic	A period in time, 206 million years to 144 million years ago when dinosaurs existed; it is the time in history when birds, reptiles, and mammals first appeared.

Keel	A ridge shaped part of the turtle. (In a boat it is the main structure that provides stability.)
Musk	A strong stinky and greasy secretion from an animal's gland.
Omnivore	An animal that will eat both plants and animals.
Organism	A form of life
Plastron	The underside of a turtle or tortoise shell.
Scutes	The scales on a turtle shell.
Sinkholes	A natural depression on the surface of the land where a stream flows underneath the ground, removing soil or bedrock.
Subspecies	An animal that is distinct in many ways such as looks, and eating habits, but can still breed together.
Terrestrial	Living on the land rather than in the sea or air.
Watershed	An area where rain water would flow over the land, into a particular lake, river, estuary or ocean.

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Turtle Truth... Turtles live on every continent except Antarctica.

Acknowledgments

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George Heinrich
www.gophertortoisecouncil.org

Allen Salzberg
www.herpdigest.org

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National Estuary Program

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