

COLORADO DIVISION OF WILDLIFE

Quick Key to Amphibians and Reptiles of Colorado



Colorado Herpetofaunal Atlas



COLORADO DIVISION OF WILDLIFE
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What is the Colorado Herpetofaunal Atlas?

It is a Web-based atlas that compiles and displays information on the distribution and abundance of amphibians and reptiles throughout Colorado.

Why is the Colorado Herpetofaunal Atlas important?

The current distribution, abundance, and population trends of many salamander, frog, toad, turtle, lizard, and snake species in Colorado are poorly known. Some species appear to be declining, but there isn't enough information to determine whether the decline is cause for alarm or simply part of a natural fluctuation pattern.

The atlas Web site allows scientists—and the public—to document their observations of amphibians and reptiles. After being verified by an experienced herpetologist, these observations are added to the Web site database and help create statewide distribution maps for each species.

How can I get involved?

The Atlas' success depends in large part on volunteers. To register as an observer, go to the Web site (<http://ndis.nrel.colostate.edu/herpatlas/coherpatlas>) and obtain an Observer Identification Number (OIN). Also, introductory field orientations are periodically offered around the state. These sessions include an introduction to the atlas Web site, hands-on field training, and how to document and submit herpetofaunal observations. To learn more, or to schedule a field session, contact Tina Jackson at tina.jackson@state.co.us or call (719) 227-5237.

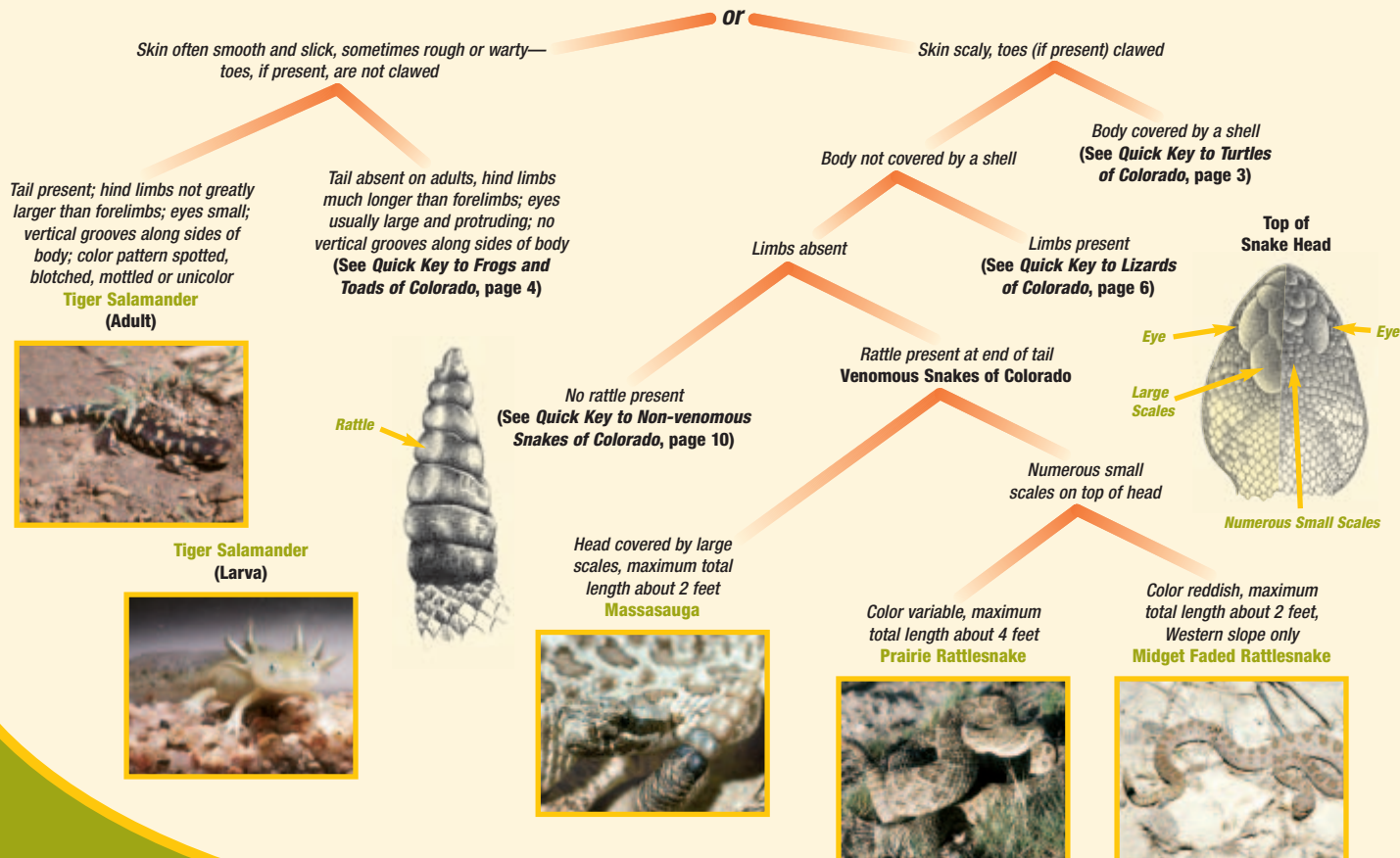


How do I use this key to the Colorado Herpetofaunal Atlas?

This key contains paired statements describing adult reptiles and amphibians. Drawings highlight important identifying characteristics to look for on the animal. Composite drawings combine the features of several animals.

Beginning with the first pair of statements, choose the statement that best matches your specimen. Follow the red line to the next pair of statements. Continue to choose the description that most closely matches the animal until you reach a species name and photo. You can confirm your identification using the Web site, which has additional photographs, species descriptions, sound files of species calls, and ecological information. If you find an animal that doesn't fit any description found in this key, it may be introduced to the state, an exotic, non-native species or even a juvenile or color variant of a native species. If possible, take a picture of the animal to submit to the atlas Web site for identification. Photos depicted with **orange** borders and species names have not been seen in Colorado for decades. If you find one of these animals, report your observation immediately and document the location and identification of the animal with photographs.

Quick Key to AMPHIBIANS and REPTILES of Colorado



Quick Key to TURTLES of Colorado

Carapace (upper shell) hard, covered by rigid, horny plates,
five claws on forefeet

or

Carapace flat and leathery, with row of raised tubercles
(bumps) on leading edge, three claws on forefeet, elongated snout
Spiny Softshell Turtle

Yellow line down middle of the back and
other conspicuous yellow lines radiating on
carapace, plastron (lower shell) has distinct
hinge, primarily found on land (terrestrial)

Ornate Box Turtle



No conspicuous yellow lines on upper shell

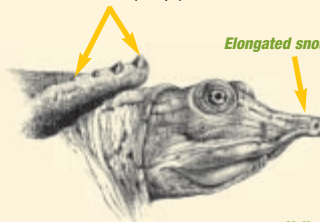
Carapace mostly greenish,
plastron orange or red,
head with yellow streaks
Painted Turtle



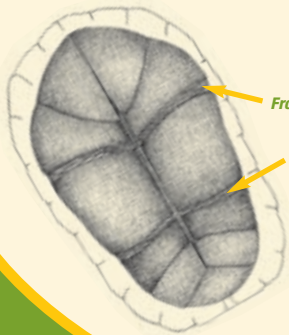
Carapace mostly brownish:
no yellow streaks on head

Raised tubercles (bumps)

Elongated snout



Double-hinged Plastron



Front hinge

Rear hinge

Carapace lacking saw-toothed rear
margin, plastron double-hinged
Yellow Mud Turtle

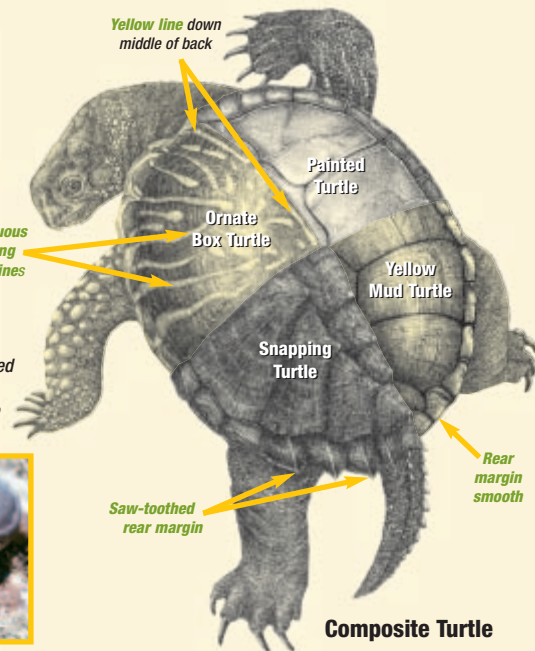


Carapace with saw-toothed
rear margin, plastron
small and lacking hinge
Snapping Turtle



Yellow line down
middle of back

Conspicuous
radiating
yellow lines



Composite Turtle



Quick Key to FROGS and TOADS of Colorado

or

Skin warty, large lumpy parotoid glands behind eyes

Skin relatively smooth, no parotoid glands

No light stripe down middle of back

Light stripe down middle of back

Head small with fold of skin behind eyes
Great Plains Narrow-mouthed Toad

No fold of skin behind eyes

No large symmetrical dark blotches on back

Large symmetrical dark blotches on back
Great Plains Toad



Vertical pupils; rear feet each with single, hard dark "spade"

No cranial crests, usually found above 8,000'
Boreal Toad



Cranial crests, usually found below 7,000'
Woodhouse's Toad



Pupils not vertical

No boss (lump) between eyes



Boss (large lump) between eyes

Boss hard, mostly eastern Colorado
Plains Spadefoot



Parotoid glands nearly circular, body tan or gray with red warts
Red-spotted Toad



Parotoid glands large and triangular, body green with scattered dark spots
Green Toad



Boss pliable, western Colorado
Great Basin Spadefoot

Body greenish-yellow with dark blotches; spade on rear foot elongated; body length may exceed 2.5 inches
Couch's Spadefoot



Body gray or brown with dark spots; spade on rear foot about as broad as it is long; body length up to 2.5 inches
New Mexico Spadefoot



No folds down the sides of the back (dorsolateral folds)

Conspicuous dorsolateral folds (folds along the sides of the back)

Dark mask through eye from snout to angle of jaw, usually light mid-dorsal stripe, found in north-central Colorado
Wood Frog



Toepads not enlarged

Toepads distinctly enlarged
Canyon Treefrog



Dark spots on body, no mid-dorsal stripe

Dorsolateral folds broken and inset near groin, body tan or brown
Plains Leopard Frog



Dorsolateral folds continuous from eye to groin, body green or brown
Northern Leopard Frog



Fold of skin around top of eardrum; body size may exceed 7 inches
Bullfrog



Maximum body size less than 1.5 inches

Stripe through eye from snout to groin, usually three stripes on back (may be spotted), little webbing on hind feet
Chorus Frog



Triangular spot between eyes, extensive webbing on hind feet
Northern Cricket Frog*



A cranial crest is a ridge that borders the middle and top side of the eye.

Dorsolateral folds are folds of skin on the sides of the back.

A mid-dorsal stripe is a stripe down the middle of the back.



A **spade** is a horny projection on the bottom of a spadefoot toad's back foot. The spadefoot uses the spade to dig itself deep into the ground.

Tubercles (tubercles) are large bumps on the underside of the foot; toads often have two on each rear foot.



*Photos depicted with orange borders and species names have not been seen in Colorado for decades.

Vertical pupil

A boss is a lump between the eyes.

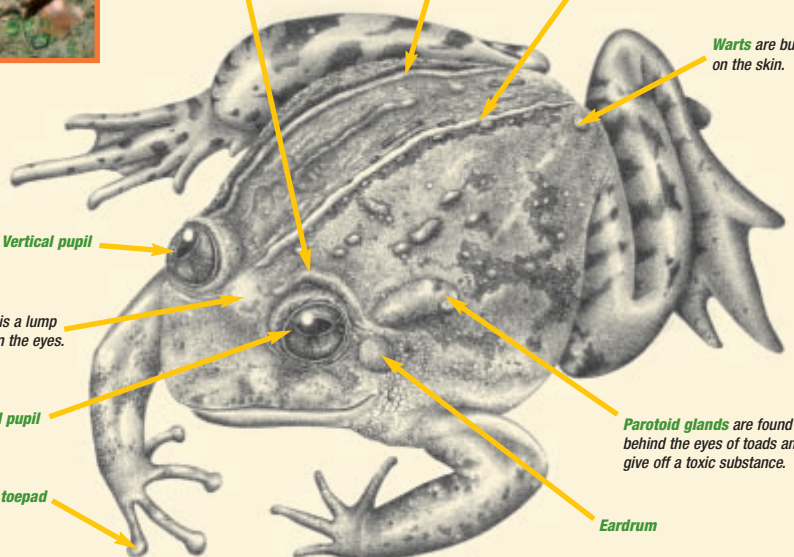
Horizontal pupil

Enlarged toepad

Warts are bumps on the skin.

Parotoid glands are found behind the eyes of toads and give off a toxic substance.

Eardrum



Composite Frog/Toad

Quick Key to LIZARDS of Colorado

or

Horn-like spines on back of head

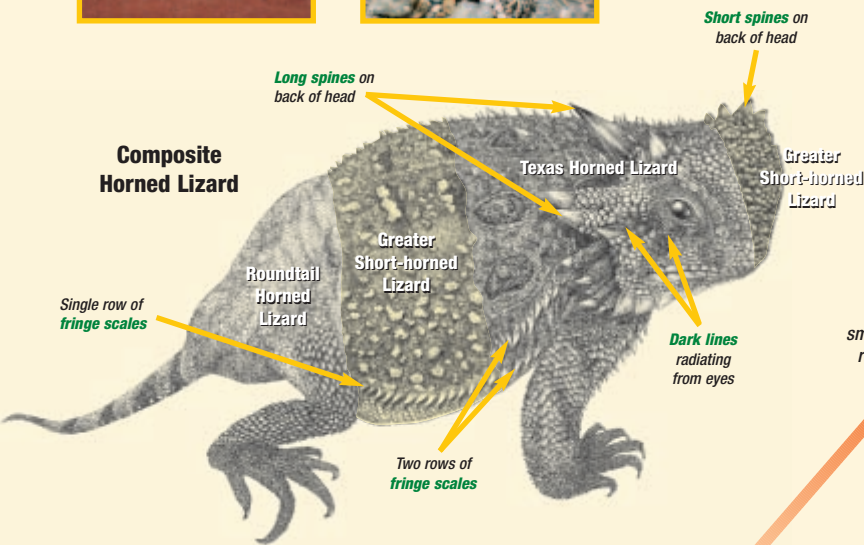
No horn-like spines on back of head

Short spines on back of head, no dark bars radiating from eyes

Long spines on back of head, two rows of fringe scales on sides of body, dark bars radiating from eyes
Texas Horned Lizard

No fringe scales on sides of body
Roundtail Horned Lizard

Single row of fringe scales on sides of body,
Greater Short-horned Lizard



Scales variable, but not very shiny

Rear margin of each scale on back pointed

Scales on back rounded and granular

Scales on back smooth and shiny with rounded rear edges

Continued from this point on page 8

Individual scales clearly black and cream, total length to 13.75 inches
Great Plains Skink



Black wedge-shaped mark on side of neck, up to 13 inches total length
Desert Spiny Lizard



Longitudinal stripes down length of very slender body, total length to about 7.75 inches

Usually has light stripe along each side of back contrasting strongly with brown body and dark stripes; occurs south and west of Arkansas River
Variable Skink



Body tan with several dark stripes; occurs north and east of Arkansas River
Many-lined Skink



No black wedge-shaped mark on neck

Keeled scales on rear of thigh, dorsal color variable
Prairie Lizard/Plateau Lizard Complex



Found in central and southeastern Colorado

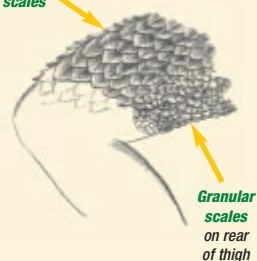


Found in eastern Colorado

Granular scales on rear of thigh, black bar usually present on shoulder
Sagebrush Lizard



Keeled scales



Granular scales on rear of thigh



Skink Body



Found in western Colorado



Primarily found in Archuleta County, Colorado

Quick Key to LIZARDS of Colorado

(See previous page for Horned Lizards, Skinks, and Spiny Lizards)

or

External ear openings visible

No ear opening

No external ear openings
Lesser Earless Lizard



Distinct neck between head and body, no large and rectangular belly scales

No distinct neck between head and body, large and rectangular belly scales

Dark collar-like mark on neck
Eastern Collared Lizard



No dark collar-like mark on the neck

Stripes running length of body, no spots or checkered pattern

Conspicuous brown spots on back
Long-nosed Leopard Lizard



Found on western slope
Plateau Striped Whiptail



Found on eastern slope
Six-lined Racerunner



No conspicuous brown spots on back

Checkered pattern

Scales down middle of back not enlarged; black spot on chest behind foreleg
Side-blotched Lizard



Row of enlarged scales down middle of back
Ornate Tree Lizard



Scales in front of gular fold abruptly enlarged; occurs on Eastern Slope



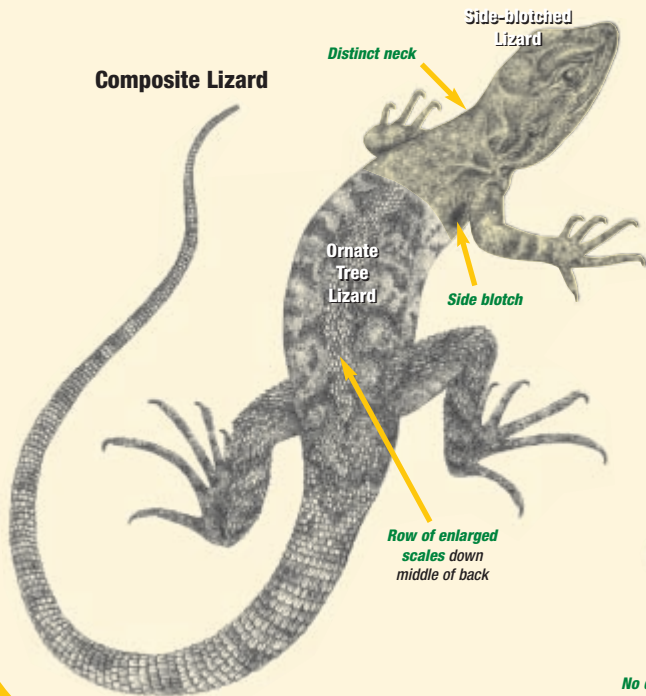
Scales abruptly enlarged

Gular fold

Scales in front of gular fold not abruptly enlarged; occurs on Western Slope
Western Whiptail



Composite Lizard



One or two complete stripes down center of back; more checkered appearance; back of thigh spotted or reticulated
Diploid Checkered Whiptail



Single stripe down center of back (stripe may be incomplete); less checkered appearance; unbroken, irregular pale streak on posterior surface of one or both thighs
Triploid Checkered Whiptail



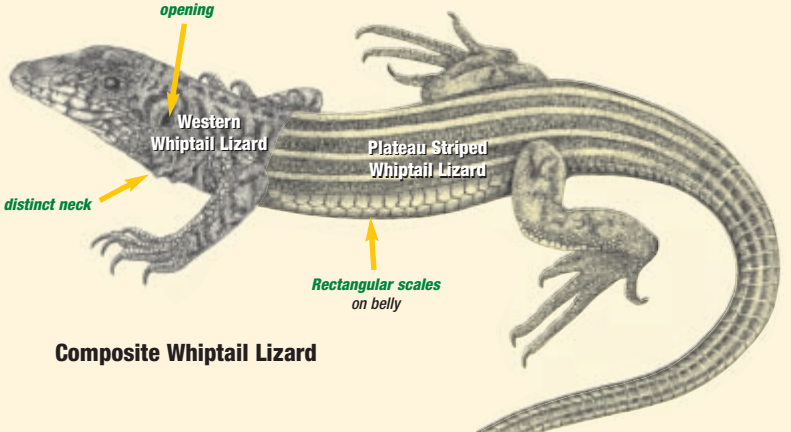
External ear opening

No distinct neck

Western Whiptail Lizard

Plateau Striped Whiptail Lizard

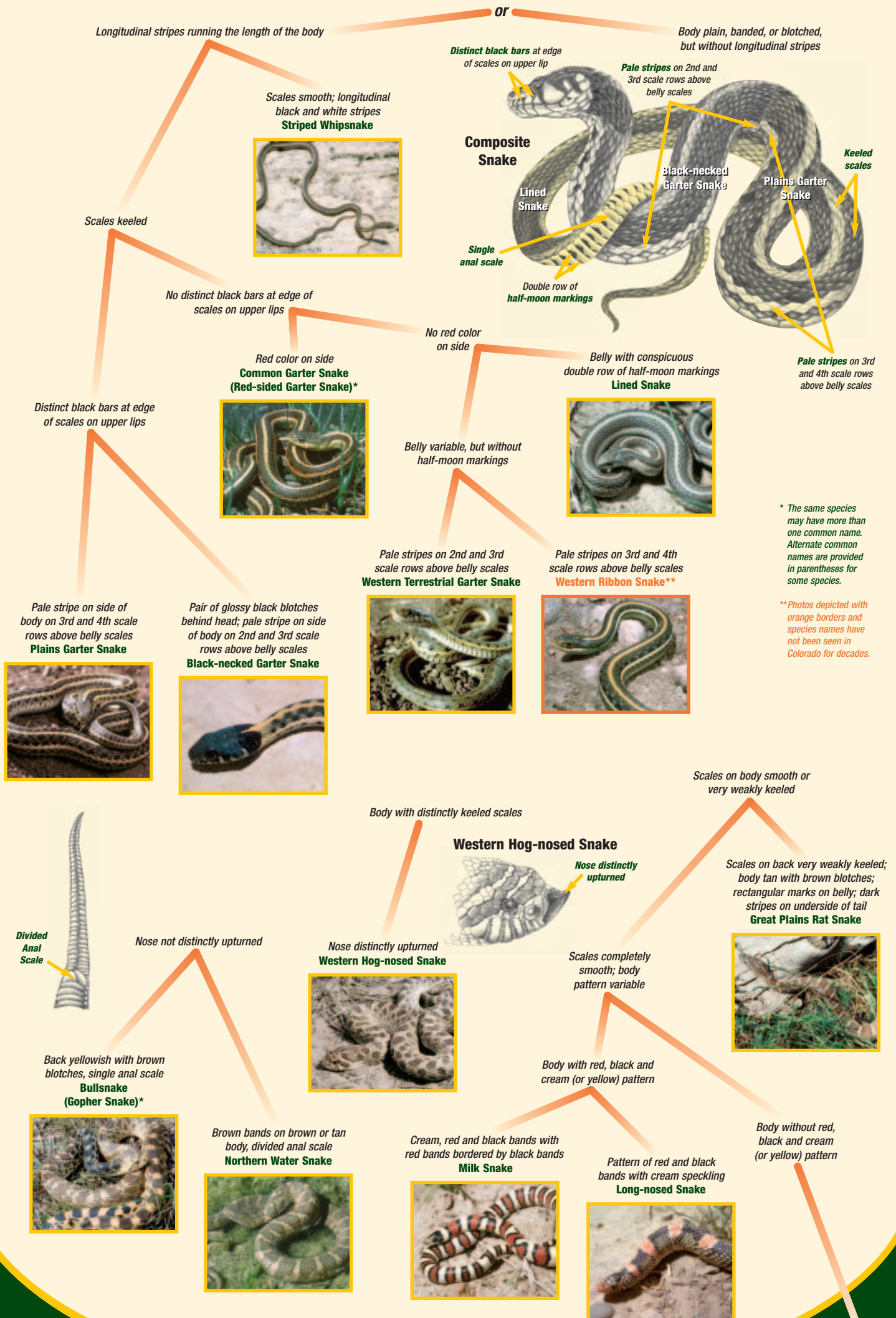
Rectangular scales on belly



Composite Whiptail Lizard

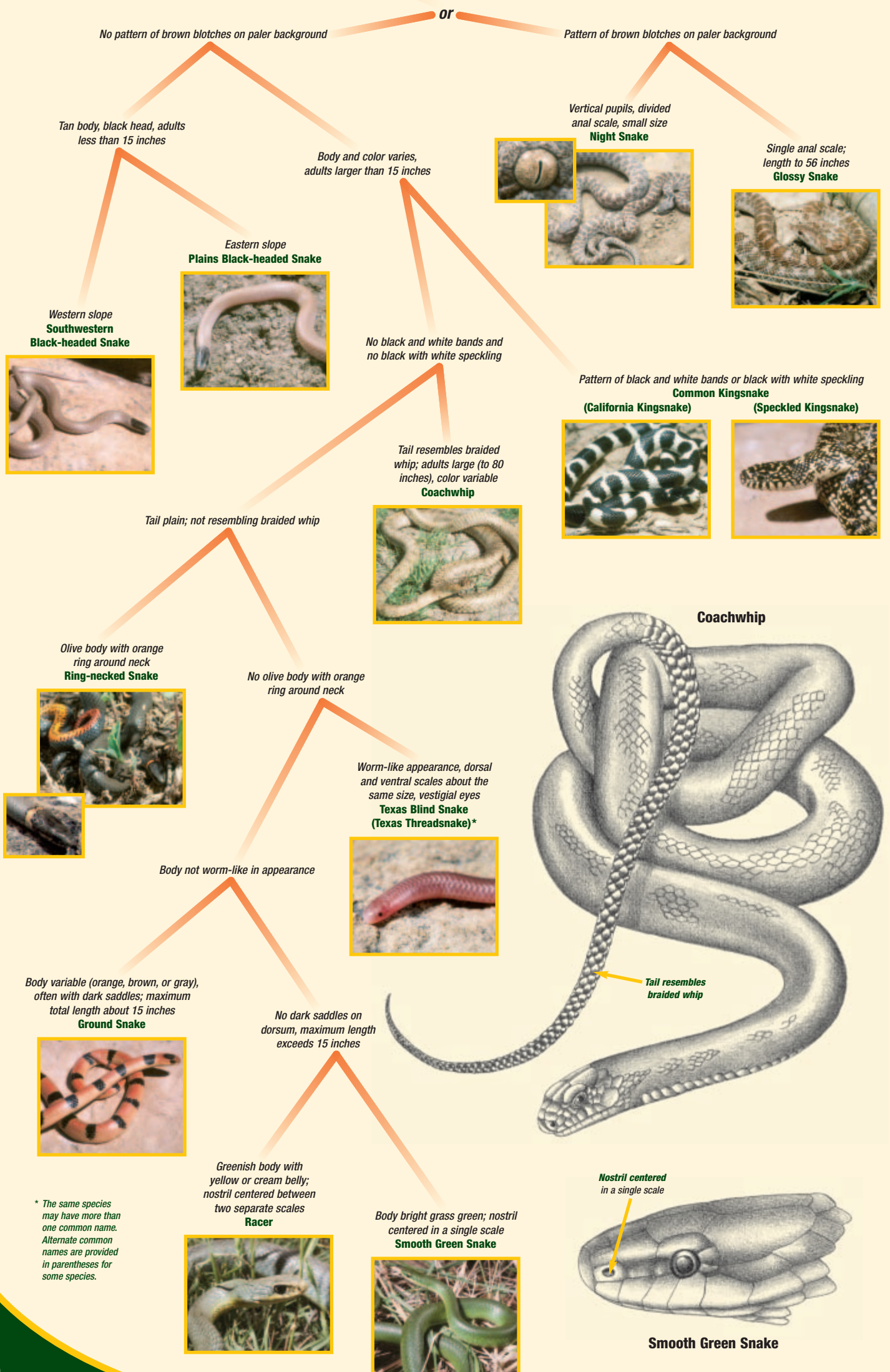
Quick Key to NON-VENOMOUS SNAKES of Colorado

(See page 2 for Key to Venomous Snakes)



Continued from this point on page 12

Quick Key to NON-VENOMOUS SNAKES of Colorado

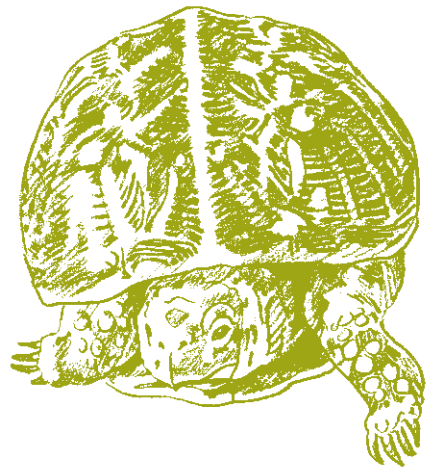


* The same species may have more than one common name. Alternate common names are provided in parentheses for some species.



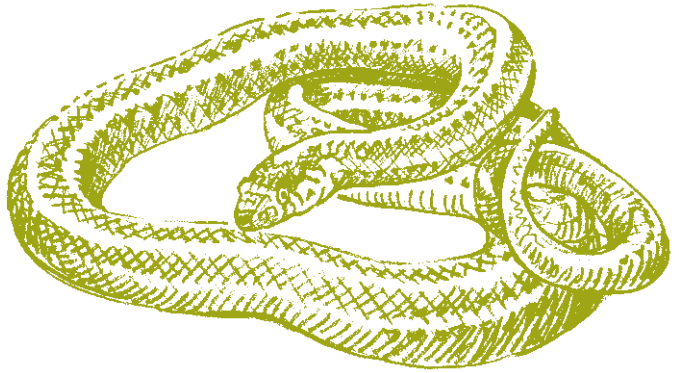
How to Observe Reptiles and Amphibians

- Learn to recognize venomous snakes and observe them from a safe distance.
 - Be gentle on the animals and their habitat. Do not trample amphibian breeding sites.
 - Use caution when lifting or turning objects to find animals. If possible, wear protective gloves. If you remove animals from under rocks or logs, place the objects back in their original positions and then release any animals you captured next to the object. The microhabitats under these objects are used by many kinds of organisms; it may take years to develop suitable conditions for some of them.
 - Do not collect live specimens unless you are working on a specific research project and have the necessary scientific collection permit from the Colorado Division of Wildlife. Instead, take photographs of the animals you find. Specimens collected as road kills can be donated (with data noting location and date of collection) to the University of Colorado Museum in Boulder.
- Do not move animals from one location to another. Do not release pets or other individuals that have been in captivity for an extended period of time or held with other animals. Some of the possible results of translocating animals or releasing captives include: death of animals released in unsuitable habitat, disruption of populations that are genetically adapted to local conditions, transmission of disease, harm to native wildlife, and confusion of the natural distribution of the released species.
 - Clean your nets, boots, and other gear with a 10% chlorine bleach solution between surveys to reduce the possibility of inadvertently transferring pathogens from one location to another.
 - Be careful not to create a traffic hazard on roads. If you find a snake, turtle, and other species on a road and can safely remove it, be sure to pull over to the side and park off the road if possible. Record your observation data, then release the animal well off the road on the side to which it was headed. Do not stop or attempt to retrieve animals from heavily traveled roads if doing so would endanger you or other motorists.



Tips for Conducting Herpetofaunal Surveys

- Always bring plenty of **data sheets** (download from Web site) with you into the field to record information. Good science does not rely on memory!
- It's essential that you know where you are. Take the time to find your survey site on a topographic map. You can print one from the distribution maps on the Web site.
- Visit a site at different times of the year and under different weather conditions, and try to visit a site in different years. By doing multiple surveys, you increase your chances of finding most of the species that occur in the area and you can also document year-to-year changes.



Essential Information for Every Observation

- **Precise location.** One of the primary purposes of this project is to determine the geographic distribution of Colorado's herpetofauna, so observations without location information are almost useless. Mark the location of your observation on a topographic map. You can get longitude, latitude, elevation and Township/Range/Section information directly from the map. If possible, obtain UTM (Universal Transverse Mercator) coordinates using a global positioning system (GPS). As a cross-check on this information, or if you do not have a GPS unit, please record a written description of the location (plus the county name). You really can't record too much information on the location.
- **Date.** Observation dates help researchers determine activity period as well as trends in the distribution and abundance of Colorado's herpetofauna.
- **Observer's name.** Once you **register** as an observer, you can just type in your Observer Identification Number (OIN) when you enter your data on the Web site. If you will be mailing in your observation forms, it's a good idea to record your name too.
- **Number of individuals detected for each species.** The number of individuals of each species you saw or heard is important for assessing changes in their relative abundance over time.
- **Photograph.** Submitting a photograph that documents the amphibian or reptile you observed allows others to have confidence in your identification, and it allows researchers to make maximal use of your information for scientific analyses. Of course, taking a photograph won't always be possible. In these cases, you should note the identifying characteristics you observed in your specimen(s) on your data sheet.



Good Places to Look for Amphibians and Reptiles

- Edges and shallows of lakes and ponds
- Marshes and other wetlands
- Creeks and margins of rivers
- Intermittent stream courses with permanent pools
- Pools that form after heavy rains or floods
- Rock outcrops
- Sandy prairies
- Plains and valleys with lots of rodent burrows
- Arroyos (dry gulches, washes)
- Debris on the ground near abandoned ranch or farm buildings
- Prairie dog towns (be alert for rattlesnakes)

Help assure the future of wildlife in Colorado.

Funding for wildlife protection from the sale of hunting and fishing licenses is not enough! Buy your habitat stamp and join the thousands of Coloradans

who are saving and protecting critical wildlife habitat. Habitat stamps cost only \$10.25, give access to state wildlife areas, and include the Colorado Search and Rescue fee. They can be purchased anywhere hunting and fishing licenses are sold, online, or by calling (800) 244-5613.



Keeping Colorado Wild

The Colorado Division of Wildlife is the state agency responsible for protecting and managing wildlife and its habitat, as well as providing wildlife-related recreation. The Division is funded by hunting and fishing license fees, federal grants, and Colorado Lottery proceeds through Great Outdoors Colorado.

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