Quick Key to Amphibians and Reptiles of Colorado

Colorado Herpetofaunal Atlas
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 herptofaunal 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.
Skin often smooth and slick, sometimes rough or warty—
toes, if present, are not clawed

Skin scaly, toes (if present) clawed

Tail present; hind limbs not greatly larger than forelimbs; eyes small; vertical grooves along sides of body; color pattern spotted, blotched, mottled or unicolor

Tiger Salamander
(Adult)

Tail absent on adults, hind limbs much longer than forelimbs; eyes usually large and protruding; no vertical grooves along sides of body
(See Quick Key to Frogs and Toads of Colorado, page 4)

Body not covered by a shell
(See Quick Key to Turtles of Colorado, page 3)

Limbs present
(See Quick Key to Lizards of Colorado, page 6)

Rattle present at end of tail
Venomous Snakes of Colorado

No rattle present
(See Quick Key to Non-venomous Snakes of Colorado, page 10)

Head covered by large scales, maximum total length about 2 feet
Massasauga

Color variable, maximum total length about 4 feet
Prairie Rattlesnake

Color reddish, maximum total length about 2 feet, Western slope only
Midget Faded Rattlesnake

Body covered by a shell

Limbs absent

Numerous small scales on top of head

Numerous Small Scales

Large Scales

Eye

Eye

Top of Snake Head

AMPHIBIANS and REPTILES of Colorado

Quick Key to AMPHIBIANS and REPTILES of Colorado

Key adapted from Lauren Livo’s Keys to Amphibians and Reptiles of Colorado.
Photos by Lauren Livo and Steve Wilcox
Key illustrations by Helen Zane Jensen
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

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

Key adapted from Lauren Livo’s Keys to Amphibians and Reptiles of Colorado. Photos by Lauren Livo and Steve Wilcox. Key illustrations by Helen Zane Jensen.
Quick Key to
LIZARDS of Colorado
(See previous page for Horned Lizards, Skinks, and Spiny Lizards)

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

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

No dark collar-like mark on the neck

Dark collar-like mark on neck

No conspicuous brown spots on back

Conspicuous brown spots on back

Row of enlarged scales down middle of back

Scales down middle of back not enlarged; black spot on chest behind foreleg

Checkered pattern

Row of enlarged scales down middle of back

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

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

No ear opening

External ear openings visible

No ear opening

Lesser Earless Lizard

Conspicuous brown spots on back

Long-nosed Leopard Lizard

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

Western Whiptail

Side blotch

Rectangular scales on belly

Six-lined Racerunner

Checkered pattern

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

Ornate Tree Lizard

Scales down middle of back

Side-blotched Lizard

Conspicuous brown spots on back

Long-nosed Leopard Lizard

Row of enlarged scales down middle of back

Oxwith Tree Lizard

Composite Whiptail Lizard

Composite Lizard
Quick Key to NON-VENOMOUS SNAKES of Colorado
(See page 2 for Key to Venomous Snakes)

**Key adapted from Lauren Livo’s Keys to Amphibians and Reptiles of Colorado. Photos by Lauren Livo and Steve Wilcox. Key illustrations by Helen Zane Jensen.**

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NON-VENOMOUS SNAKES

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**

1. **No pattern of brown blotches on paler background**
   - Tan body, black head, adults less than 15 inches
   - Body and color varies, adults larger than 15 inches

2. **Pattern of brown blotches on paler background**
   - Vertical pupils, divided anal scale, small size
   - Night Snake
   - Single anal scale; length to 56 inches
   - Glossy Snake
   - Pattern of black and white bands or black with white speckling
   - Common Kingsnake
   - (California Kingsnake) (Speckled Kingsnake)

3. **Tail resembles braided whip; adults large (to 80 inches), color variable**
   - Coachwhip

4. **Tail plain; not resembling braided whip**
   - Olive body with orange ring around neck
   - Ring-necked Snake

5. **Olive body with orange ring around neck**
   - No olive body with orange ring around neck

6. **Body not worm-like in appearance**
   - No dark saddles on dorsum, maximum length exceeds 15 inches
   - Ground Snake

7. **Worm-like appearance, dorsal and ventral scales about the same size, vestigial eyes**
   - Texas Blind Snake
   - (Texas Threadsnake)*

8. **Tail resembles braided whip**
   - Coachwhip

9. **No dark saddles on dorsum, maximum length exceeds 15 inches**
   - Smooth Green Snake

10. **Tail resembles braided whip**
    - Body bright grass green; nostril centered in a single scale
    - Smooth Green Snake

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

Key adapted from Lauren Livo’s Keys to Amphibians and Reptiles of Colorado. Photos by Lauren Livo and Steve Wilcox. Key illustrations by Helen Zane Jensen.
• 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.

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.
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.