

MONTANA NATURAL HERITAGE PROGRAM

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Montana Amphibian and Reptile Distribution February 7, 1994

Background.

Many amphibians are apparently declining in the western U.S. and world-wide (Corn and Fogelman 1984, Phillips 1990). Acid rain, ozone depletion, pollution by toxic chemicals and heavy metals, predation and/or competition by exotic species, habitat alteration, climate change and immunosuppression in conjunction with disease have all been suggested as possible causes (Beiswenger 1986, Hayes and Jenkins 1986, Barinaga 1990, Wyman 1990, Wake 1991, Crump et al. 1992, Carey 1992). Declines are particularly severe in the western United States among frogs and toads. Leopard frogs and boreal toads have been extirpated from much of Colorado (Corn et al. 1989) and spotted frogs (now a USFWS Candidate species) have dramatic extirpations and declines in the southern mountains of Nevada and Utah and west of the Cascade/Sierra Ranges in Washington, Oregon and California (McAllister and Leonard 1990). In western Montana, leopard frogs have apparently undergone dramatic extirpations in the past decade. Even in such pristine environments as National Parks, amphibians are declining. Boreal toads have gone from the most wide-spread amphibian in the Jackson Hole region (Carpenter 1953) to the least abundant amphibian found in Yellowstone and Grand Teton National Parks (Peterson et al. 1992).

Several questions need answering. Are amphibian populations in Montana declining? If so, which species and where? What are the causes of declines? And, what can we do about them? To answer the first two questions, baseline surveys are needed. One quick way is to visit sites where amphibians are known from past research and collections. Dr. Charles Peterson from Idaho State University has contacted >100 museums from across North America and received data on specimens from Idaho, Wyoming, and Montana; he has shared the Montana data with the Montana Natural Heritage Program (MTHP). We have begun entering this data into a database and digitizing it. When this is completed we will enter data from the literature, unpublished reports, and individual observations.

The MTHP and Montana Department of Fish, Wildlife, and Parks are currently working together to refine the known distribution of amphibians and reptiles in Montana, resurvey historic collection and research sites, establish long-term monitoring sites, and produce a book on the distribution, status, and ecology of reptiles and amphibians of Montana. As a first step in disseminating herp information, we are scheduled to produce a

16 page supplement to Montana Outdoors (Spring 1995 issue) on the reptiles and amphibians of Montana; this will include descriptions, color photos, maps, and natural history on all species known or suspected to occur in the state. For this project to succeed it will require participation from, and partnerships with, many other government agencies, private organizations, and committed individuals.

You can help at some level of activity. These could include any or all of the following: 1) submitting miscellaneous observations (see guidelines below); 2) conducting standard time-constraint surveys (contact Jim Reichel, MTNHP); 3) setting up and running one or more long-term monitoring sites (contact Jim Reichel, MTNHP); 4) contributing high quality photos of Montana herps; 5) assisting in data-entry; or 6) anything else you can think of!.

Guidelines for Submitting Miscellaneous Observations.

The purpose of the following guidelines is to balance the acquisition of relevant and useful information with the effort required to enter and manage the data.

What to Report:

1. For common species, reports should be a minimum of .5 miles apart. Reported locations may be closer if the locational data is precise to within 0.06 miles (300 ft).
2. Any sightings of herps showing reproductive activity (adults calling; eggs or tadpoles when the species is known; turtle nests, etc.).
3. All sighting of Coeur d'Alene salamanders (expected in W MT), Pacific giant salamanders (W), tailed frogs (W), Canadian toads (W), northern leopard frogs (Statewide), wood frogs (W), snapping turtles (E), spiny softshells (E), western hognose snakes (E), or smooth green snakes (E).
4. Each record must provide: species name, date (day, month, year), and location (map, Township-Range-Section, UTM, and/or detailed description, etc), and your name, address, and phone number.
5. Please try to avoid reporting second-hand observations. If someone tells you about a sighting, encourage them to report it directly.

How to Report:

Although any format is acceptable, you will make our data entry and filing work easier if you use photocopies of the Species of Special Concern forms provided. Don't be intimidated by the length; only a few **ed items are required.

Where to Report:

Please send all reports to the Montana Natural Heritage Program: Jim Reichel, 444-2546.

Computer Software:

The herp Atlas database is maintained in dBase III+ files and cross-linked to the Geographic Information System software ARC-INFO. We currently have a data-input program (in Clipper, a public access program available free) that can be used without having dBase III+. We plan to create a data-output program that could display data without having dBase III+. If you are interested in using these programs to submit data to us (and for your personal use), please let us know. We hope to have both programs available in late 1994. NOTE: the programs will only work on DOS machines.

Data Output:

The herp Atlas database is available for your use. If you want copies of particular records, or want to query the database in some way, let us know. At present we do not have canned report forms, but should have them later this year.

AMPHIBIANS AND REPTILES OF MONTANA

February 7, 1994

Prepared by James D. Reichel, Montana Natural Heritage Program. Much of the information was obtained from Stebbins (1966), Smith (1978), Smith and Brodie (1982), Nussbaum et al. (1983), Baxter and Stone (1985), and Groves (1989); maps from Thompson (1982) divide Montana into one degree of latitude and longitude blocks (latilong) in Montana. Records within each block are reported (see Bergeron et al. 1992 Montana Bird Distribution, for map of the state or contact the MTNHP). I recommend you get Stebbins (1985) for drawings to go with the information provided.

KEY TO MAP SYMBOLS: S= specimen in a museum, or literature in which a specimen is implied; v= visual or auditory evidence; l= records probably referable to this latilong but possibly belong in an adjacent latilong; ?= a questionable record including sight records of difficult to identify species and unusual range extensions which have not been confirmed.

Tiger Salamander (Ambystoma tigrinum)

- adult snout-vent length 3-6"
- smooth moist skin without scales
- color pattern variable; usually with dark background and yellow, tan or green blotches
- larvae with external gills and uniform gray color
- typically found in or near ponds in arid habitats; rarely found in water that has fish present
- Primarily E MT; some gaps in distribution; look for particularly in W MT.
- Montana Natural Heritage Program rank: G5 S4

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Long-toed Salamander (Ambystoma macrodactylum)

- adult snout-vent length 2-3¼"
- smooth moist skin without scales
- dark gray to black with a green to yellow irregular (and sometimes broken) stripe down the middle of the back
- lacks nasolabial groove running vertically from nostril to mouth; has 12-13 costal grooves on side of body; longest toe on hind foot longer than sole of hind foot
- found in a large variety of habitats from sagebrush to alpine; breeds in ponds or lakes
- Primarily W MT. Check range edges S and E of known MT range
- Montana Natural Heritage Program rank: G5 S5

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Idaho Giant Salamander (Dicamptodon aterrimus)

- adult snout-vent length 3½-8½"
- back is marbled tan or copper on a black background; massive looking head
- smooth moist skin without scales
- larvae are most common and found in high quality streams under rock or logs; they are often found above the elevation where fish are present
- adults may be found in moist forests, normally under logs or debris
- not positively known from Montana. Sight record from Giltedge Creek, 4 mi. S Saltese, Mineral Co.
- MT Natural Heritage Program rank: G4Q S1?

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Rough-skinned Newt (Taricha granulosa)

- adult snout-vent length 2¼-3½"
- rough moist skin without scales
- dorsal color is dark brown and ventral is bright yellowish-orange
- may be found in water or moist terrestrial situations
- Disjunct from main range; probably an introduction
- Sight record from pond near Thompson Falls, SWNW section 7, T21N R29W
- MT Natural Heritage Program rank: G5 SE1

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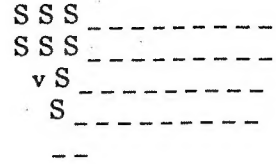
Coeur d'Alene Salamander (Plethodon idahoensis)

- adult snout-vent length 2-3"
- dark gray to black with a green, orange, yellow, or reddish irregular stripe down the middle of the back
- has nasolabial groove running vertically from nostril to mouth (may require magnification to see)
- has 14 (rarely 15) costal grooves on side of body
- toes very small compared to Long-toed Salamander
- found in seeps and stream-side talus
- NW MT; Range reasonable well known; possibly check in Bitterroots S of known range.
- similar species: Long-toed Salamander
- Montana Natural Heritage Program rank: G5 S2

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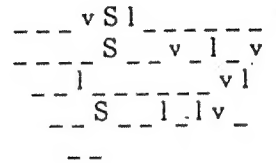
Tailed Frog (Ascaphus truei)

- adult snout-vent length 1½-2"
- outer digit of hind foot broader than other digits (other frogs and toads not broader)
- no tympanum (other frogs and toads have tympanum)
- male has bulbous "tail"
- tadpole is unique in that it has a large oral disc modified into a sucker
- found in and along small, cold mountain streams
- W MT
- Very sensitive to siltation. Frequently disappears in and downstream from clearcuts and water diversions.
- Montana Natural Heritage Program rank: G5 S3



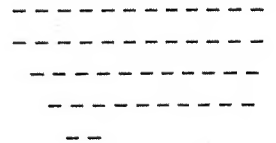
Plains Spadefoot (Spea bombifrons)

- adult snout-vent length 1½-2½"
- a single black cutting tubercle on the sole of the hind feet
- pupil vertically elliptical
- a high bony boss between the eyes
- arid habitats; breeds in ephemeral ponds
- Scattered location in E MT. Large gaps in known distribution.
- may stay underground for several years during a drought; emerges to breed and feed during and after rain storms
- MT Natural Heritage Program rank: G5 S4?



Great Basin Spadefoot (Spea intermontana)

- adult snout-vent length 1½-2½"
- a low glandular boss between the eyes
- a single black cutting tubercle on the sole of the hind feet
- pupil vertically elliptical
- not known in Montana. Occurs in Idaho within 50 mi. of border near S Beaverhead Co.
- may stay underground for several years during a drought; emerges to breed and feed during and after rain storms
- MT Natural Heritage Program rank: G5 SP



Boreal toad (Bufo boreas)

- adult snout-vent length 2½-5"
- cranial crests faint or absent
- has oval parotoid glands
- prominent dorsal line except in young
- two tubercles on the sole of the hind feet
- pupil horizontal
- adults largely terrestrial in a variety of habitat from valley bottoms to high elevations; breed in lakes, ponds, slow streams with a preference for shallow areas with mud bottoms
- MT Natural Heritage Program rank: G5 S5. W MT. Declines recorded in Yellowstone N.P. Possible disjunct populations in SE mtns.

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Rocky Mountain Toad (Bufo woodhousii)

- adult snout-vent length 2-5"
- cranial crests prominent and touch parotoid glands; no boss on head or snout
- parotoid glands twice as long as wide
- prominent dorsal line
- two tubercles on the sole of the hind feet
- pupil horizontal
- partly terrestrial, but usually found near permanent water in arid regions; breed in relatively permanent water of lakes, reservoirs, rivers
- SE and EC MT. Some gaps in distributions
- Geographic/habitat relationship to other toads in state not well known.
- MT Natural Heritage Program rank: G5 S4

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Great Plains Toad (Bufo cognatus)

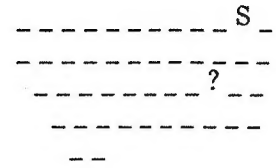
- adult snout-vent length 2-4½"
- blotches on back, often in pairs
- cranial crests join at boss on snout (at front border of eyes) and touch parotoid glands
- often wavy, irregular dorsal line
- two tubercles on the sole of the hind feet
- pupil horizontal
- primarily a grassland species; breeds in ephemeral ponds, ditches, slow streams following heavy summer rains
- NC and E MT. Large gaps in distributions
- Geographic/habitat relationship to other toads in state not well known
- MT Natural Heritage Program rank: G5 S4

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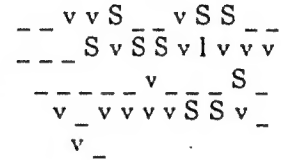
Dakota Toad (Bufo hemiophrys)

- adult snout-vent length 1½-3"
- cranial crests fuse into boss on head (rear border of eyes or throughout their length) and typically are separate from parotoid glands
- pale diffuse line on back
- two tubercles on the sole of the hind feet
- pupil horizontal
- a prairie toad found close to water
- Not well known in MT; only from extreme E MT. W edge of range.
- Geographic/habitat relationship to other toads in state not well known
- MT Natural Heritage Program rank: G5 S1



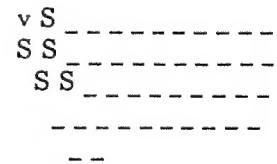
Boreal Chorus Frog (Pseudacris triseriata)

- adult snout-vent length ½-1½"
- green, gray, olive, or brown background color with 3-5 stripes on back
- stripe on side extends through the eye
- very small or no toe pads
- very slight webbing between hind toes
- seldom seen away from breeding ponds in the spring, except for transforming juveniles in summer
- Widespread in MT; not known in sections of W MT; moderate gaps in known range; large gaps in specimen records.
- MT Natural Heritage Program rank: G5 S5



Pacific Tree Frog (Pseudacris regilla)

- adult snout-vent length 3/4 - 2"
- green, gray, olive, or brown background color with dark spots or longitudinal blotches on back
- prominent eye stripe
- toe pads well developed
- hind toes webbed for about 1/2 their length
- found in a variety of habitats from valley bottoms to high mountains; breed in ephemeral shallow ponds
- NW MT; check range edges to S and E.
- MT Natural Heritage Program rank: G5 S4?



Spotted Frog (Rana pretiosa)

- adult snout-vent length 2-4"
- dorsal spots usually present but not set off with light colored halos
- adults with red, orange, or yellow on underside of hind legs
- dorsolateral folds present
- found at marsh edges of lakes, ponds and streams
- W MT; some populations may be extirpated from MT, especially in W valleys. Range contractions evident at southern edge of range (UT, NV, WY) and W of Cascade Mtns.
- MT Natural Heritage Program rank: G4 S4

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Leopard Frog (Rana pipiens)

- adult snout-vent length 2-5"
- dark dorsal spots present and set off with light colored halos
- colored white, cream, or yellowish below
- dorsolateral folds present
- found at marsh edges of lakes, ponds and streams and in dense meadow vegetation; breeding ponds typically are vegetation choked
- Was widespread (but local?) in MT. Apparently severe population extirpations in western MT; status uncertain in E. Bullfrog and fish introductions or acid rain implicated in extirpations in other areas.
- MT Natural Heritage Program rank: G5 S4

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Bullfrog (Rana catesbeiana)

- adult snout-vent length 3½-8"
- dorsolateral folds absent
- greenish-brown dorsally with few spots except in juveniles
- found in permanent water; apparently have not invaded high elevation sites
- Introduced; has been implicated in extirpations of native amphibians and reptiles
- MT Natural Heritage Program rank: G5 SE4

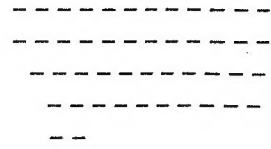
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Wood Frog (Rana sylvatica)

- adult snout-vent length 1½-3¼"
- prominent eye mask extends forward past nostril almost to upper lip, bordered below by a white stripe
- light vertebral stripe may be present
- dark dorsal spots not present between dorsolateral folds
- no red, orange or yellow ventrally
- dorsolateral folds present
- usually not found far from water
- Not positively known from MT; however, it has been reported from Bowman Lake (GNP) and Havre
- MT Natural Heritage Program rank: G5 SR



Western Box Turtle (Terrapene ornata)

- to 8"
- blunt central beak on upper jaw
- plastron (lower shell) hinged in adults, shell fully closable
- terrestrial
- primarily a prairie turtle most often found where soil is sandy
- not certainly recorded in MT; USNM has specimen collected by Hayden in "Yellowstone" presumably in 1860. Extreme NW edge of range; recent records are almost certainly wayward pets.
- MT Natural Heritage Program rank: G5 SR

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Snapping Turtle (Chelydra serpentina)

- to 18"
- hooked beak on upper jaw
- small plastron (lower shell).
- prominent crest on tail
- aquatic; in permanent rivers and lakes
- E MT; MT range poorly know; NW edge of range
- MT Natural Heritage Program rank: G5 S3

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Painted Turtle (Chrysemys picta)

- to 10"
- a dark colored turtle with bright red and yellow markings on the head and shell
- aquatic; in permanent ponds, rivers and lakes
- Widespread in MT. Large gaps in known range in central MT, very large gaps in specimen records.
- MT Natural Heritage Program rank: G5 S5

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Spiny Softshell (Apalone spinifera)

- to 20"
- no scales on shell
- edges of shell flexible
- aquatic; known only from major river systems in MT: Yellowstone and Missouri
- E MT. MT range poorly known. NW edge of range.
- MT Natural Heritage Program rank: G5 S3

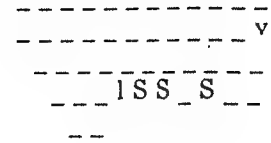
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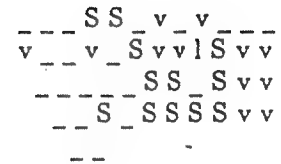
Sagebrush Lizard (Sceloporus graciosus)

- adult snout-vent length 2-2½"
- somewhat spiny body and tail scales
- gray or brown with wide mid-dorsal stripe, and a pair of narrow dorsolateral light stripes
- throat with mottled blue patches and belly with bright blue patches; blue faint or lacking in females
- found in sagebrush flats, occasionally other arid habitats
- Extreme SC and E MT. NE edge of range. Should be looked for outside of currently limited known area in SC MT and possibly thermal areas north of Yellowstone NP or elsewhere.
- MT Natural Heritage Program rank: G5 S3?



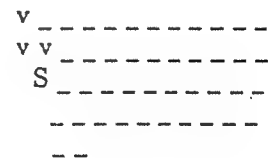
Eastern Short-horned Lizard (Phrynosoma douglassii)

- adult snout-vent length 2½-4"
- spiny ridges or spines at rear of head
- gray, beige, brown, reddish, or tan, often with dark blotches and light specks; usually with dark brown blotches on side of neck
- found in a variety of habitats from sage brush and grasslands to open forest; soil usually with some sand or loose areas for burrowing, but may be primarily rocky or hardpan; soil always well drained
- Widespread in E MT. Moderate gaps in known MT range. Range extends slightly into Canada.
- Highly valued by pet trade; may be vulnerable to commercial over-collecting.
- MT Natural Heritage Program rank: G5 S4.



Western Skink (Eumeces skiltonianus)

- adult snout-vent length 2¼-3¼"
- scales smooth, flat and rounded posteriorly
- broad brown stripe running down the back edged with black and bordered on each side by a conspicuous whitish dorsolateral stripe
- tail bright blue in juveniles, fades in adults
- found in a wide variety of habitats, but rocky, semi-open habitat is preferred
- NW MT. E edge of range; poorly known in MT.
- MT Natural Heritage Program rank: G5 S3?



Northern Alligator Lizard (Elgaria coerulea)

- adult snout-vent length 3½-5¼"
- longitudinal skin fold on each side of body
- dorsal color typically brown, gray or olive with darker flecks; ventral color lighter
- may be aggressive and will bite
- most common in open forests or forest edges; often found under rocks, logs or in talus
- NW MT. NE edge of range. Should be looked for N, E, and S of currently known range in MT.
- MT Natural Heritage Program rank: G5 S3

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Rubber Boa (Charina bottae)

- total length to 30"
- blunt tail, very small eyes
- color uniform olive-green or brown, lighter and sometimes mottled below
- often found in forested humid habitats
- mostly nocturnal
- W MT. Probably more widespread in W MT than is now known. E edge of range not clearly known.
- Highly prized in pet trade.
- MT Natural Heritage Program rank: G5 S4

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Plains Hognose (Heterodon nasicus)

- total length to 32"
- nose keeled above, turned upward
- a blotched, brown, heavy-bodied snake
- will often pretend to strike with open mouth and hissing, then play dead with belly up
- found in sandy or gravelly arid areas, farmlands, or floodplains
- E MT. W edge of range not well known
- Frequently collected in pet trade; may be vulnerable to commercial collecting.
- MT Natural Heritage Program rank: G5 S3?

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Smooth Green Snake (Opheodrys vernalis)

- total length to 26"
- plain bright green above
- found usually in damp meadows with dense vegetation
- Extreme NE MT. NW edge of range; not well known in MT. Disjunct populations in WY and perhaps SE Idaho.
- MT Natural Heritage Program rank: G5 S3

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Racer (Coluber constrictor)

- total length to 45"
- olive green above and yellowish below (young have brown blotches)
- eyes appear large
- lower preocular scale small, wedged between adjacent upper labial
- very fast and aggressive
- generally absent from high elevations and dense forest
- Widespread in MT; N edge of range. Gaps in known range in central MT.
- MT Natural Heritage Program rank: G5 S5

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Gopher Snake (Pituophis melanoleucus)

- total length to 80"
- dark brown or black blotches on a light brown or tan background
- some or all dorsal scales keeled; four prefrontal scales
- most common in semi-arid brushy areas and fields, but found in a wide variety of habitats; usually not in dense forests
- Widespread in MT. Gaps in known range in central MT
- Frequently collected in pet trade; may be vulnerable to commercial collecting.
- MT Natural Heritage Program rank: G5 S5

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Milk Snake (Lampropeltis triangulum)

- total length to 54"
- red or orange saddles or rings bordered by black rings and separated by white to yellowish rings
- habitat not well known in MT; secretive, often nocturnal
- NW edge of range. Not well known in MT.
- MT Natural Heritage Program rank: G5 S1

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Common Garter Snake (Thamnophis sirtalis)

- total length to 51"
- with yellowish dorsal stripe bordered by longitudinal gray to black stripes; probably has red spots in most dorsal dark stripe in most or all MT populations; has light lateral stripe on 2nd and 3rd scale rows
- usually has 7 upper labial scales
- most common near water
- Widespread in MT: Gaps in known range in SW and C MT
- MT Natural Heritage Program rank: G5 S5
- Similar species: other garter snakes.

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Western Garter Snake (Thamnophis elegans)

- total length to 42"
- with yellowish dorsal stripe bordered by longitudinal gray to black stripes; probably lacks red spots in most or all MT populations; has light lateral stripe on 2nd and 3rd scale rows
- usually has 8 upper labial scales
- most common near water
- Widespread in MT. Gaps in known range in SW and E MT.
- MT Natural Heritage Program rank: G5 S5
- Similar species: other garter snakes.

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Plains Garter Snake (Thamnophis radix)

- total length to 42"
- with red (occasionally yellowish) dorsal stripe bordered by longitudinal gray to black stripes; has light lateral stripe on 3rd and 4th scale rows
- usually has 7 upper labial scales
- most common near water
- Widespread in E MT. Gaps in known range in C MT
- Similar species: other garter snakes.
- MT Natural Heritage Program rank: G5 S4

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Prairie Rattlesnake (Crotalus viridis)

- total length to 62"
- deep pit between nostril and eye
- rattle on tip of tail
- Widespread in MT except NW; range gaps with specimen support. To be looked for in SW and NW.
- MT Natural Heritage Program rank: G5 S4

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