

Perspective of the Herpetofauna of  
NCAR Property

Matthew S. Rand and Hobart M. Smith

The present analysis of the herpetofauna of the NCAR property is based primarily upon intensive studies over four years (1988-1991) and intermittent ones for the next two years (1992-1993), by MSR, on an extensive site in Skunk Canyon (which overlaps with NCAR property along its northern and western boundaries). During the first three years of those six, the site was visited, on average, every two days, as early as February and as late as November, as long as weather conditions were conducive to reptile or amphibian activity. Most visits, however, were between March and September of each year.

Other portions of the NCAR holdings were visited frequently over the last six years, by one or the other or both of us, with the express purpose of locating and identifying herpetological specimens. Most searches were carried out in Skunk Canyon, Bear Canyon and in the vicinity of Echo Rock plus the other rock outcrops along the west- and south-facing perimeters of the NCAR mesa.

The rock outcrops along the south-facing slope of the NCAR mesa, just west of the NCAR buildings, were extensively searched and frequently visited because of the favorable nature of the habitat. This area possesses ideal habitat

for the Redlipped plateau lizard (*Sceloporus undulatus erythrocheilus*), which is the most conspicuous and frequently encountered reptile on the property. This species is strictly saxicolous (rock-dwelling) in this part of its range, is the only kind of lizard we encountered on the property, and probably is the only one currently present in the area (see following tables). Sexually mature males of this common species exhibit two different color morphs in the breeding season (April-June). Both the orange (most common) and the yellow color phases are present on NCAR property. The same situation occurs throughout most of the rocky habitat around the Boulder area, including Boulder Mountain Parks. These lizards were commonly encountered on rock outcrops on the south-facing slope of Skunk Canyon, the hogback formation along the western boundary of the property, especially in areas away from the foot trails.

This lizard was encountered on every sunny day that the site was visited between mid-March and late October of every year. Therefore we do not list specific dates with this species in Table 1. The population density of *S. u. erythrocheilus* on NCAR property appears to be comparable to that of adjacent areas of Boulder Mountain Parks (ca. 8-10 adult lizards per hectare). Young lizards were observed each year of the study between middle and late August. Winter survivorship is also apparent, as fall hatchlings were observed the following spring each year. The NCAR population of this species is, therefore, apparently self-

sustaining, as is no other amphibian or reptile species there.

No amphibians were located on the property, although some may occur (see Table 3). Since all searches were performed during daylight hours, however, the nocturnal activities characteristic of amphibians, rather than absence, may account for our failure to observe any.

We confirmed the existence of five species of reptiles (one lizard and four snakes) within NCAR boundaries. We are quite certain that one other snake species (the Western terrestrial garter snake) occurs, but found none ourselves (see Table 1). A few other species probably occur on the property, according to (1) information from local residents who frequent the area, and (2) habitat type and known general range of the species (see Table 2). Still others (Table 3) may be rare visitors.

The NCAR property and area surrounding it we could not determine to contain any particularly rare or unusual herpetofaunal representatives, nor are any really to be expected. All taxa found were reptiles known to occur commonly in the area. Evidence for the Milk snake (*Lampropeltis triangulum*) was encountered infrequently due to the secretive nature of its behavior. That species and the rattlesnake (*Crotalus viridis*) tend to be active during crepuscular hours (dusk and dawn), and for that reason their abundance (or rarity) was perhaps not accurately judged. Similarly, others that may occur but have not yet been

observed may have eluded perception through their nocturnal (amphibians) or secretive (*Tantilla*, *Tropidoclonion*) habits, or their protective coloration (*Liochlorophis*); see Table 3.

The over-all picture of the NCAR property is that it is not, in general, a good habitat for amphibians and reptiles, for several reasons. (1) Habitat diversity is too limited, lacking significant aquatic components, both lentic and lotic (where amphibians of various kinds might occur), and hot, barren, thermal cul-de-sacs (where, for example, the Eastern short-horned lizard, *Phrynosoma douglasi brevirostre*, known to occur widely in the foothills area, might occur). (2) Size is too limited, not providing sufficient area for self-sustained populations of most species. (3) Access is too limited, housing developments effectively having eliminated dispersion of prairie species into the open, eastern grassy areas of the property. (4) Human disturbance is too great, as a result of the numerous, well-used trails that cut across all parts of the property (mostly spontaneously generated, not officially maintained), and of the small size of the NCAR holdings, inevitably concentrating the focus of human activities.

These limitations do not diminish the credit due to NCAR authorities for making the most of the natural areas that do exist on their property, inviting public use with admirable attention to minimization of degradation of the habitats represented and their biota. Those efforts are exemplary models not equalled elsewhere in the vicinity,

serving for the better understanding and appreciation of certain aspects of nature by the local (and visiting) citizenry.

Having so maintained, it does not follow that the NCAR property even remotely approaches an ideal herpetological sanctuary; it does not. It is a seminatural and irreversibly depauperate segment of the local foothills-prairie ecotone. Nevertheless it is to be hoped that its future will not see any major alteration in the admirable success, to the limits permitted by circumstances, that "natural" management has so far achieved.

Table 1. Species observed

*Sceloporus undulatus erythrocheilus* (Eastern fence lizard)

see text

*Coluber constrictor flaviventris* (Eastern Yellowbelly racer)

1988 5/11 Adult, among rocks on west end of NCAR

buildings

6/3 Juvenile, on rock outcrop near water tank

7/15 Adult, north of NCAR, south face of Skunk

Canyon

8/6 Adult, grassy slope below rock outcrop, south

face NCAR

1989 5/22 Adult, south-facing slope of Skunk Canyon

6/2 Adult, south-facing slope of Skunk Canyon

6/16 Adult, east end of mesa, just below NCAR

buildings

6/28 Juvenile, south-facing slope of Skunk Canyon

1990 5/23 Adult, grassy slope south of NCAR buildings

5/31 Adult, on road up to NCAR, westernmost extreme

curve of road

7/15 Adult, grassy field on mesa west of NCAR

buildings

7/23 Adult, near trail on mesa, ~40 m west of NCAR

buildings

1991 4/23 Juvenile, south-facing slope of Skunk Canyon

5/28 Adult, south-facing slope of Skunk Canyon

6/8 Adult, near water tanks

1993 5/27 Juvenile, just off Bear Canyon access road  
*Pituophis melanoleucus sayi* (Bullsnake)

1988 7/15 Adult, on grassy slope of Skunk Canyon (south  
 face)

8/12 Juvenile, hogback at edge of Bear Canyon

1989 5/5 Juvenile, south-facing slope of Skunk Canyon

6/16 Gravid adult female, south slope Skunk Canyon

1990 3/21 Young of last year, south-facing slope of Skunk  
 Canyon

3/22 Juvenile, west of NCAR buildings

5/22 Young of last year, south-facing slope of Skunk  
 Canyon

8/6 Small adult, down south face slope of NCAR mesa

1991 4/23 Adult, rocky outcrop east-facing slope near  
 Bear Canyon

1992 Adult, north-facing slope of Skunk Canyon

*Lampropeltis triangulum gentilis* (Central Plains Milk Snake)

1989 8/16 Shed skin of a ~45 cm adult, south-facing slope  
 of Skunk Canyon

1993 7/15 NCAR parking lot, DOR

*Crotalus v. viridis* (Prairie rattlesnake)

1990 5/7 Young of last year, south-facing slope of Skunk  
 Canyon

5/17 Adult, south-facing slope of Skunk Canyon

(Note: neither snake rattled when approached repeatedly  
 and photographed)

Table 2. Species of Probable Occurrence on NCAR Property

*Thamnophis elegans vagrans* (Wandering garter snake).

Reported to have been observed in Skunk Canyon on slope facing NCAR property. A mating ball was described to MSR by a local resident. A fairly detailed description of pattern and color suggests this species. Widely distributed in foothills areas.

*Thamnophis sirtalis parietalis* (Red-sided garter snake).

This species has been taken from as close as two miles from NCAR. It may be found in the riparian habitat of either Bear Creek or Skunk Creek. Widely distributed in plains areas, including the foothills ecotone, but strongly riparian.

*Thamnophis radix haydeni* (Western plains garter snake).

Common throughout the Boulder area, but less restricted to the riparian habitat than the preceding.

*Tropidoclonion l. lineatum* (Northern lined snake). Another plains species, widely distributed, that prefers moist, grassy areas, sometimes near rocky outcrops, but is not aquatic.



Table 3. Species Possibly of Rare Occurrence

*Ambystoma tigrinum mavortium* (Barred tiger salamander). A common species in this area, but dependent on presence of permanent, fishless ponds, which are lacking on NCAR property or nearby. Adults can, however, travel long distances in rainy spells, and no doubt are occasional transients in the area of present concern, but no permanent population is likely.

*Bufo woodhousei* (Woodhouse's toad). Another common, widely distributed species, mostly of the plains in this area. Fishless, permanent ponds nearby are essential for an established population, although waif individuals may occasionally reach our area.

*Rana pipiens* (Northern leopard frog). A formerly common species that undoubtedly occurred at one time along Boulder Creek and its tributaries, including Bear and Skunk creeks, but now appears to have been exterminated there by pollution, habitat destruction and predation.

*Liochlorophis vernalis blanchardi* (Western smooth green snake). A foothills/montane species, this could on rare occasion occur on NCAR property, inasmuch as occasional anecdotes indicate its presence nearby in such habitats. Its protective coloration undoubtedly enhances its apparent rarity.

*Tantilla n. nigriceps* (Northern plains blackhead snake). A highly secretive, largely subterranean species, found in nearby foothills.

-- Department of Zoology, University of Texas, Austin, Texas  
78712 (MSR); Department of EPO Biology, University of  
Colorado, Boulder, Colorado 80309-0334 (HMS).

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