

A CHECK LIST OF THE REPTILES AND AMPHIBIANS ON THE DEPARTMENT OF ENERGY OAK RIDGE RESERVATION, ANDERSON AND ROANE COUNTIES, TENNESSEE

J.A. KLEIN

*Oak Ridge National Laboratory
Oak Ridge, Tennessee 37831*

ABSTRACT

Reptiles and amphibians have been observed and collected on the Department of Energy (DOE) Oak Ridge Reservation (ORR) for over 35 years in association with environmental research and day-to-day operations at the Oak Ridge National Laboratory as well as other DOE facilities of Oak Ridge Operations. The ORR includes a wide diversity of habitats and should thus be expected to maintain a corresponding diversity of herpetofauna. The present checklist includes 14 species of salamanders, 12 species of frogs and toads, 10 species of turtles, 5 species of lizards, and 18 species of snakes.

DESCRIPTION OF THE STUDY AREA

Currently the ORR occupies some 35,600 acres (14,440 ha) adjacent to the city of Oak Ridge. This area is part of the original 92-sq-miles (238 km²) tract purchased by the Manhattan Engineering District of the U.S. Army Corps of Engineers in 1942 for an atomic energy development and production center. The ORR lies within the Ridge and Valley Province of the southern Appalachians and is characterized by parallel southwest-northeast ridges of sandstone, shale, and cherty dolomite separated by valleys underlain by less weather-resistant limestone and shale (McMaster, 1963). Elevations range from approximately 230 m along the Clinch River to over 400 m at the crest of one of the six major ridges traversing the site.

Except for forest management, the ORR has been relatively undisturbed since the early 1940's, although it was extensively farmed prior to that time. Approximately one-third of the total acreage has been planted in pine or is in natural pine. In many locations the pine has been replaced by upland hardwoods dominated by oak species. Some areas, such as pipeline and power line rights-of-ways and a few field research sites, are maintained as open fields. Kitchings and Mann (1976) give a description of the general ecology of the area.

METHODS

Collections of the herpetofauna were made sporadically by numerous individuals over the entire existence of the ORR. An initial list of species, (Johnson, 1964) was based on specimens collected in one summer. That study forms the basis for the present checklist and has been updated as the result of extensive collecting by the author and incidental observations by other researchers on the ORR. Common names, for the most part, are those of the species. In some cases where the local subspecies has a common name completely different from the species name, the subspecies name has been used, i.e. Mole Snake vs. Prairie Kingsnake, Stripe-necked Musk Turtle vs. Loggerhead Musk Turtle, Fowler's toad vs. Woodhouse's Toad, etc.

A number of species, although expected to be found in the ORR, have not been positively identified over the last 35 years. These species are included in the list of problematical species at the end of this paper.

RESULTS

Included in the Oak Ridge Reservation check list are 14 species of salamanders, 12 species of frogs and toads, 10 species of turtles, 5 species of lizards, and 18 species of snakes. Mentioned are an additional 7 problematical species. Several species are listed as endangered, threatened, or deemed in need of management in Tennessee (Eager and Hatcher, 1980). The only positively identified species found on the ORR that are included in this list are the Six-lined Racerunner (*Cnemidophorus sexlineatus*), the Cumberland Turtle subspecies of the Pond Slider (*Trachemys scripta troosti*) and the Hellbender (*Cryptobranchus alleganiensis*), all deemed in need of management. Both the Racerunner and the Slider appear to be abundant in the appropriate habitat. The Hellbender does appear to be uncommon, but this is probably due to a lack of streams offering the correct microenvironment for this species. Of the problematical

CHECK LIST OF THE AMPHIBIANS AND REPTILES OF THE OAK RIDGE RESERVATION

Class Amphibia—Amphibians

ORDER URODELA—Salamanders

| | | |
|-------------------------|---|--|
| Family Ambystomatidae | Spotted Salamander Marbled Salamander | <i>Ambystoma maculatum</i> (Shaw) <i>Ambystoma opacum</i> (Gravenhorst) |
| Family Cryptobranchidae | Hellbender | <i>Cryptobranchus alleganiensis</i> (Daudin) |
| Family Salamandridae | Newt | <i>Notophthalmus viridescens</i> (Rafinesque) |
| Family Plethodontidae | Green Salamander Dusky Salamander Two-lined Salamander Long-tailed Salamander Cave Salamander Spring Salamander Red-back Salamander Slimy Salamander Mud Salamander Red Salamander | <i>Aneides aeneus</i> (Cope & Packard) <i>Desmognathus fuscus</i> (Green) <i>Eurycea bislineata</i> (Green) <i>Eurycea longicauda</i> (Green) <i>Eurycea lucifuga</i> (Rafinesque) <i>Gyrinophilus prophyriticus</i> (Green) <i>Plethodon cinereus</i> (Green) <i>Plethodon glutinosus</i> (Green) <i>Pseudotriton montanus</i> (Baird) <i>Pseudotriton ruber</i> (Latreille) |

ORDER ANURA—Frogs and Toads

| | | |
|---------------------|--|---|
| Family Pelobatidae | Eastern Spadefoot Toad | <i>Scaphiopus holbrookii</i> (Harlan) |
| Family Bufonidae | American Toad Fowler's Toad | <i>Bufo americanus</i> (Holbrook) <i>Bufo woodhouseii</i> (Girard) |
| Family Hylidae | Northern Cricket Frog Spring Peeper Gray Treefrog Chorus Frog | <i>Acris crepitans</i> (Baird) <i>Hyla crucifer</i> (Wied-Neuwied) <i>Hyla versicolor</i> (Le Conte) <i>Pseudacris triseriata</i> (Wied-Neuwied) |
| Family Microhylidae | Eastern Narrow-mouth Toad | <i>Gastrophryne carolinensis</i> (Holbrook) |
| Family Ranidae | Bullfrog Green Frog Pickerel Frog Southern Leopard Frog | <i>Rana catesbeiana</i> (Shaw) <i>Rana clamitans</i> (Latreille) <i>Rana palustris</i> (Le Conte) <i>Rana sphenoccephala</i> (Cope) |

Class Reptilia—Reptiles

ORDER TESTUDINATA—Turtles

| | | |
|----------------------|---|---|
| Family Chelydridae | Snapping Turtle | <i>Chelydra serpentina</i> (Linnaeus) |
| Family Kinosternidae | Stripe-neck Musk Turtle Stinkpot | <i>Sternotherus minor</i> (Agassiz) <i>Sternotherus odoratus</i> (Latreille) |
| Family Emydidae | Box Turtle Map Turtle False Map Turtle Painted Turtle River Cooter Pond Slider | <i>Terrapene carolina</i> (Linnaeus) <i>Graptemys geographica</i> (Le Sueur) <i>Graptemys pseudogeographica</i> (Gray) <i>Chrysemys picta</i> (Schneider) <i>Pseudemys concinna</i> (Le Conte) <i>Trachemys scripta</i> (Schoepff) |
| Family Trionychidae | Spiny Softshell Turtle | <i>Trionyx spiniferus</i> (Le Sueur) |

ORDER SQUAMATA (Lacertilia)—Lizards

| | | |
|------------------|----------------------|---|
| Family Iguanidae | Eastern Fence Lizard | <i>Sceloporus undulatus</i> (Latreille) |
| Family Teiidae | Six-lined Racerunner | <i>Cnemidophorus sexlineatus</i> (Linnaeus) |
| Family Scincidae | Ground Skink | <i>Scincella lateralis</i> (Say) |
| | Five-lined Skink | <i>Eumeces fasciatus</i> (Linnaeus) |
| | Broad-headed Skink | <i>Eumeces laticeps</i> (Schneider) |

ORDER SQUAMATA (SERPENTES)—Snakes

| | | |
|-------------------|-----------------------|---|
| Family Colubridae | Worm Snake | <i>Carphophis amoenus</i> (Say) |
| | Scarlet Snake | <i>Cemophora coccinea</i> (Blumenbach) |
| | Racer | <i>Coluber constrictor</i> (Linnaeus) |
| | Ring-necked Snake | <i>Diadophis punctatus</i> (Linnaeus) |
| | Corn Snake | <i>Elaphe guttata</i> (Linnaeus) |
| | Rat Snake | <i>Elaphe obsoleta</i> (Say) |
| | Eastern Hognose Snake | <i>Heterodon platyrhinos</i> (Latreille) |
| | Mole Snake | <i>Lampropeltis calligaster</i> (Harlan) |
| | Milk Snake | <i>Lampropeltis triangulum</i> (Lacepede) |
| | Common Kingsnake | <i>Lampropeltis getulus</i> (Linnaeus) |
| | Common Water Snake | <i>Nerodia sipedon</i> (Linnaeus) |
| | Rough Green Snake | <i>Opheodrys aestivus</i> (Linnaeus) |
| | Queen Snake | <i>Regina septemvittata</i> (Say) |
| | Brown Snake | <i>Storeria dekayi</i> (Holbrook) |
| | Red-bellied Snake | <i>Storeria occipitomaculata</i> (Storer) |
| | Common Garter Snake | <i>Thamnophis sirtalis</i> (Linnaeus) |
| | Smooth Earth Snake | <i>Virginia valeriae</i> (Baird & Girard) |
| Family Viperidae | Copperhead | <i>Agkistrodon contortrix</i> (Linnaeus) |

Problematical Species

| | |
|----------------------|---|
| Wood Frog | <i>Rana sylvatica</i> (Le Conte) |
| Mudpuppy | <i>Necturus maculosus</i> (Rafinesque) |
| Green Anole | <i>Anolis carolinensis</i> (Voigt) |
| Slender Glass Lizard | <i>Ophisaurus attenuatus</i> (Baird) |
| Crowned Snake | <i>Tantilla coronata</i> (Baird & Girard) |
| Pine Snake | <i>Pituophis melanoleucus</i> (Daudin) |
| Timber Rattlesnake | <i>Crotalus horridus</i> (Linnaeus) |

species, the Pine Snake, (*Pituophis melanoleucus*) is on the state threatened list, and the Green Anole (*Anolis carolinensis*), and the Slender Glass Lizard (*Ophisaurus attenuatus*) deemed in need of management.

All the above species have been observed within East Tennessee and the Wood Frog, Mudpuppy, Slender Glass Lizard, and Timber Rattlesnake within several miles of the Oak Ridge Reservation. It is likely that the Wood Frog and Slender Glass Lizard are to be found on the ORR as they have been observed just outside the area. The Mudpuppy is certain to be residing in the Melton Hill Reservoir surrounding the ORR. The Timber Rattlesnake may very well be extirpated on the area, although it is still commonly to be found in parts of the Smoky and Cumberland Mountains to the southeast and northwest.

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