

SPECIES PROFILE

Black Racer

Coluber constrictor constrictor

Associated Habitat: Shrublands

Federal Listing: None

State Listing: None

Affected Species: NA

Global Rank: G5

State Rank: S3

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ELEMENT 1: DISTRIBUTION AND HABITAT

1.1 Habitat Description

The Northern black racer (*Coluber constrictor constrictor*) is a long, slender snake associated with a wide variety of early successional habitats, including: xeric and mesic forests; brushy areas; meadows; old fields; rocky ridges and ledges; and swamp and marsh edges (Hunter et al. 1999, Kjoss and Litvaitis 2000, Ernst and Ernst 2003). Additionally, wetlands may be important habitat components, as this species is extremely susceptible to dehydration (Ernst and Ernst 2003). Black racers appear to have a large (10-20 ha) but distinct home range, requiring fairly extensive patches of suitable habitat (Kjoss and Litvaitis 2000). Mammal burrows, rock crevices, rotting logs, and accumulated vegetation are required features within occupied patches, all of which serve as nest sites, retreats, and hibernacula (Ernst and Ernst 2003). High hibernacula site fidelity is common (Ernst and Ernst 2003). These sites are normally used communally, either in intra- or interspecific assemblages, during the months of September through May (Ernst and Ernst 2003). Juvenile prey consists primarily of insects whereas adult prey consists of frogs, toads, birds and their eggs, small mammals, and snakes, with mammals being the dominant food item (Ernst and Ernst 2003). Oviposition, which also may be communal, occurs during May or early June in loose

soil, litter, or hollow logs (Ernst and Ernst 2003). Hatchlings emerge in August or September (Hunter et al. 1999).

1.2 Justification

Based on historic reports of large populations of black racers, substantial population declines have likely occurred in New Hampshire. In Maine, black racers are considered Endangered. Early successional and shrub-dominated habitats are rapidly declining throughout the northeastern United States, largely as a result of commercial and residential development and forest maturation (Kjoss and Litvaitis 2000). In New Hampshire, remaining patches of early-successional habitat are small and patchily distributed (Kjoss and Litvaitis 2000). Severe habitat loss, alteration, and fragmentation throughout the species' distribution is exacerbated by the species' extensive habitat requirements (Kjoss and Litvaitis 2000).

1.3 Protection and Regulatory Status

There is currently no special protection for black racers in New Hampshire.

1.4 Population and Habitat Distribution

A total of 11 subspecies of black racers are recognized, all of which range north of Mexico (Ernst and Ernst 2003). The Northern black racer occurs from southern Maine and central New York, southwest to eastern Tennessee, northwestern Georgia, and northeastern Alabama (Ernst and Ernst 2003). In New Hampshire, this species is restricted to the southern half of the state, with the greatest number of verified records in the southeast. Within this region, black racers occur discontinuously, suggesting that populations may be confined to small pockets of optimal

habitat (Klemens 1993). The species distribution map associated with this profile is based on data synthesized at the time of its creation. Distribution maps are continually being updated as new reports are received.

1.5 Town Distribution Map

Not completed for this species.

1.6 Habitat Map

The University of New Hampshire (J. Taylor, Department of Zoology and S. Hale, Complex Systems Research Center) completed a potential habitat map for black racers within its New Hampshire range. These maps were primarily based on available GIS data layers including landcover, elevation, political boundaries, and element occurrences. Various query combinations can be performed to extract polygons matching user-defined criteria. An accuracy assessment has not been conducted on this model but maps should help prioritize areas to target for further surveys. Maps will need to be updated as new data layers become available.

1.7 Sources of Information

NatureServe (2005) provided status and ranking information. New Hampshire Reptile and Amphibian Reporting Program (RAARP) records and Taylor (1993) were the primary sources of locality records. Habitat and life history information was collected from scientific literature. Crother et al. (2000) was used for common and scientific names of reptiles and amphibians.

1.8 Extent and Quality of Data

The distribution, habitat use, and condition of black racer populations in New Hampshire are not well documented. This assessment was limited to those records included within the scientific literature or as high quality observations (photographs, specimens, or expert observer) in the RAARP database.

1.9 Distribution Research

Target RAARP volunteers to produce verified reports of black racer locations, especially in those areas

where records are scarce. Systematic surveys and research are needed to provide more information regarding the condition and habitat requirements of populations. Black racers, and other rare reptiles and amphibians, should be incorporated into habitat inventories as well as management and restoration efforts. Specifically, the effects of disturbance-inducing management practices on both black racer abundance and overall early-successional herpetofaunal diversity should be evaluated (Greenberg et al. 1994), considering their association with a community type that is currently intensively managed for Lepidopteran conservation.

ELEMENT 2: SPECIES/HABITAT CONDITION

This species is widespread throughout southern New England, though little information is available to evaluate the condition of black racers in New Hampshire. In a historic report (1940-1950, specific date unknown), Donald Carle, professor of science at Keene Teachers College, noted that 112 black racers were found at one location in Keene. No observations of this magnitude are known more recently. Inventory and research are necessary to fully identify basic life-history info, habitat use, and condition of populations.

ELEMENT 3: SPECIES AND HABITAT THREAT ASSESSMENT

Habitat loss, fragmentation, road mortality, modification of ecological processes, as well as human exploitation are the primary factors threatening black racer populations in New Hampshire (Hunter et al. 1999, Kjoss and Litvaitis 2000). Refer to element 3 in the grassland and shrubland habitat profiles for a detailed discussion of threats.

ELEMENT 4: CONSERVATION STRATEGIES

In an urbanized setting, both habitat restoration and improved conductivity are essential to the long-term survival of black racers in the region (Kjoss and Litvaitis 2000). Early successional habitat is effectively restored using disturbance-inducing management treatments, including prescribed fire (Russell et al 1999). Maintaining clusters of early successional patches with minimal development is critical to the

far-ranging black racer (Kjoss and Litvaitis 2000). Refer to grassland and shrubland habitat profiles for further conservation strategies.

ELEMENT 5: REFERENCES

5.1 Literature

- Crother, B. I. Committee Chair, J. Boundy, J. A. Campbell, K. De Queiroz, D. R. Frost, R. Highton, J. B. Iverson, P. A. Meylan, T. W. Reeder, M. E. Seidel, J. W. Sites, Jr., T. W. Taggart, S. G. Tilley, and D. B. Wake. 2000. Scientific and standard English names of amphibians and reptiles of North America north of Mexico, with comments regarding confidence in our understanding. Society for the Study of Amphibians and Reptiles. Herpetological Circulars. 29
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- Russel, K. R., D. H. Van Lear, and D. C. Guynn, Jr. 1999. Prescribed fire effects on herpetofauna: review and management implications. *Wildlife Society Bulletin*. 27:374-384.
- Taylor, J. 1993. The Amphibians and Reptiles of New Hampshire. Nongame and Endangered

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5.2 Data Sources

New Hampshire Reptile and Amphibian Reporting Program (RAARP) database. Maintained by the New Hampshire Fish and Game Department, Nongame and Endangered Species Program, Concord New Hampshire (Accessed: February 14, 2005)

Distribution of Black Racer Snake in New Hampshire

Distribution

- Known
- Potential
- Historic



Known = verified observations based on specimens, photos, or expert observation [e.g., NHFG's Reptile & Amphibian Reporting Program (RAARP), museum specimens, etc.]
Historic = observations greater than 20 years old from the same data sources and Oliver and Bailey (1939).

