

Species Dossier

State of New York

Common Name: Red Salamander

Endangered Species Working Group Scientific Name: *Pseudotriton ruber*

Date compiled: Family: Plethodontidae

I. General Status

Current New York Status: Unlisted

Current Federal Status: Unlisted

Recommended New York Status:

Current status in surrounding states/provinces:

Connecticut: out of range

Massachusetts: out of range

New Jersey:

Ohio:

Ontario: out of range

Pennsylvania:

Quebec: out of range

Vermont: out of range

Current Natural Heritage rank (TNC): G5 (N) S4
global state

Global and North American Ranges:

Southern New York and Ohio to northeast Alabama.

New York's position within global range:
central **peripheral** disjunct

II. Historic New York Status and Distribution (>25 years ago)

Provide numbers and/or percent of state occupied and/or number of regions occupied (and basis for estimates), narratives, maps (if available and appropriate), and references/documentation:

Hudson valley from Albany County southward on both sides of the Hudson River, Staten

Island and Cattaraugus County. Absent from Long Island.

- III. Current New York Status and Distribution
Provide numbers and/or percent of state occupied and/or number of regions occupied (and basis for estimates), narratives, maps (if available and appropriate), and references/documentation:

Hudson valley north to Albany County, Staten Island and Cattaraugus County.

- IV. Author's Current Estimate of Population/Habitat Trends

Population Trend _____ Essential Habitat Trend

Declining	Declining
Stable	Stable
Increasing	Increasing
Unknown	Unknown

- V. Biological Description

1. Reproductive information:

Breeds in New York: yes
Confirmed in last 2 years yes
Confirmed in last 10 years yes
Confirmed in last 25 years yes
Confirmed prior to 25 years ago yes
Unconfirmed

OR

2. Does not breed in New York; is migrating or seasonal?

OR

3. Species periodically expands or contracts into or out of New York?

Age to sexual maturity Male 4 yrs; females 5 yrs.

Number of breeding attempts per year 1 attempt (annual reproduction).

Average number of young per breeding attempt 50-80 eggs.

Estimated number of reproductive years per female 8-10 yrs.

Other narrative on species biology:

Emergence of the Red Salamander generally occurs from mid-March to mid-April. Adults leave their winter stream or spring sites and maintain a terrestrial existence for the following few months (early spring to early summer). They return to an aquatic situation for the remaining summer months through fall and remain aquatic into the winter hibernation period.

Courtship and mating are summer activities (June-September) that occur in the water. The courtship is simple ending with the male's deposition of a spermatophore. The female retrieves the sperm cap and fertilization occurs internally. Egg laying occurs during the late fall and the early winter months, wherein they are fastened beneath a sheltering object imbedded in the stream or spring bottom. The eggs are approximately 4mm in diameter and go through an incubation period ranging from 58-74 days (embryo growth is very slow in the cold water environment).

Red salamander hatchlings begin to appear during early spring of the next season and range from 13-14mm in length. Larval salamanders have pigmentation on the head, dorsal surface, sides and tail with gills, leg buds and ventral surface being free of pigment and dull yellow in coloration. the gills are well developed but eyes remain rudimentary. All larvae retain a large yolk sac after hatching. larval growth rates are variable and dependant on the environment and food availability. Generally, the larvae gain approximately 1mm per month and attain 13-25mm at the end of their first growing season. Second year individuals average 20-40mm in length and third year larva 40-54mm. Transformation usually occurs in the fourth year (38 months, size is variable) of life with metamorphosis beginning in June and continuing throughout the summer months.

Adults of *Pseudotriton ruber* feed on annelids, snails, slugs, arachnids, millipedes as well as other arthropods and their larvae. Larval forms of the red salamander feed on aquatic insects and their larvae, worms and water fleas.

VI. Habitat

(describe type, vulnerability, distribution and trend in amount overtime, also estimate future trends -- do you expect habitat to be lost in future? Amount, location, type?)

Adults and larvae of the Red Salamander may be found in the cool waters of springs and streams in open and wooded situations. Such areas include springs of streams in meadows or in mixed deciduous forests. The streams usually have abundant leaf litter, gravel, sand or rock bottoms. Adults are found under logs, stones, within mosses, in piles of damp leaves or in shallow burrows under such debris. Hibernation sites are aquatic, generally within the unfrozen waters of their streams or springs (individuals remain active year round). Nest sites are difficult

to locate. The eggs are fastened to the lower surface of a large object (stones, submerged logs) buried beneath the sod of a cold stream or spring margin.

VII. Discussion of Problems/Threats/Limiting/Overall Vulnerability (of both individuals and essential habitat):

1. Lack of protection for wetland sites and no protection of upland wooded habitat.
2. Acid rain and its detrimental developmental effects on salamander eggs and larvae.
3. Wet spot excavation and game fish introduction into red salamander breeding pool and larval habitat.
4. Water level manipulation via dams.
5. Herbicide/pesticide contamination.

VIII. Additional Study, Documentation, Research or Management Needed:

1. Detailed studies into red salamander life history and ecology are lacking. Studies are needed to determine population numbers and long term trends, animal movements and habitat use, population age and sex structure and age specific survivorship.
2. Intensive surveys into historic and potential red salamander habitat.

IX. Prognosis for Recovery:

X. Documentation/References:
(also list or attach pertinent references, survey documents, studies, etc.)

1. Behler, J.L., F.W. King 1979. The Audubon Society Field Guide to North American Reptiles and Amphibians. Alfred A. Knopf, New York.
2. Bishop, S.C. 1941. The Salamanders of New York. New York State Museum Bulletin. No. 324. Albany, New York.
3. Bishop, S.C. 1969. Handbook of Salamanders-The salamanders of the United States, of Canada, and of Lower California. Comstock Publishing Ass. of Cornell University Press.
4. Collins, J.T. 1990. Standard Common and Current Scientific Names for North American Amphibians and Reptiles. Society for the Study of Amphibians and Reptiles, Herp. Circular No. 19.
5. Conant R.C., J.T. Collins 1991. Peterson Field Guide to Reptiles and Amphibians of Eastern/Central North America. Houghton Mifflin Co., Boston.
6. DeGraaf R.M., D.D. Rudis 1981. Forest Habitat for Reptiles and Amphibians of the Northeast. U.S. Government Printing Office, Forest Service and U.S. Dept. of Agriculture Eastern, Region.
7. French, T., D. Pence 1991. Legal Categories of Rare Species in the Northeastern States. Northeast Nongame Technical Committee.
8. Green, N.B., T.K. Pauley 1987. Amphibians and Reptiles in West Virginia. University of Pittsburgh Press, West Virginia Dept. of Natural Resources Nongame Wildlife Program.
9. Pfungsten, R.A., F.L. Downs 1989. Salamanders of Ohio. The College of Biological Sciences The Ohio State University, Ohio Dept. of Natural Resources, Division of Wildlife.
10. Pleuthner, R. 1981. Summation of Natural Heritage Ranks (for Amphibians and Reptiles).
11. Checklist of the Amphibians, Reptiles, Birds and Mammals of New York State, Including Their Protective Status 1987. N.Y.S. Dept. of Env. Con. Div. of Fish and Wildlife Nongame Unit.

XI. Experts Consulted/Reviewers of Dossier:

Prepared By:

Preparer's Status Recommendation:

- Endangered
- Threatened
- Special Concern
- Status Unknown
- Status Secure
- (no listing)