

**PENNSYLVANIA FISH AND BOAT COMMISSION
NATURAL DIVERSITY SECTION
TIMBER RATTLESNAKE PRESENCE-ABSENCE SURVEY GUIDELINES
(PFBC-NDS Form-06, revised 3/9/04)**

RATIONALE

Many new projects are proposed on lands that are in close proximity to areas that have long been known to harbor timber rattlesnakes. During the environmental review process, the Natural Diversity Section staff will request a timber rattlesnake presence-absence survey if: 1) a timber rattlesnake habitat assessment was positive, and/or 2) the vicinity of the area that is proposed to be developed is currently or historically known to support timber rattlesnakes. Given the terrain, timber rattlesnakes could be using the project area for denning, reproduction (rookery), basking, and/or foraging habitat. The staff recommends that a timber rattlesnake presence-absence survey be conducted to determine the extent of rattlesnake population in the project area. These surveys are to be conducted by qualified/recognized personnel. Following the survey, a report documenting the surveyor's findings is submitted to the PFBC for review and comment. This information is pertinent for the staff to provide recommendations for avoiding adverse impacts from the proposed project to the timber rattlesnake and its habitat.

PRESENCE - ABSENCE SURVEY GUIDELINES/METHODS

Habitat Assessment

If a timber rattlesnake habitat assessment (see PFBC-NDS form #5) has not been conducted, areas within and around the project area need to be identified that are most likely to support timber rattlesnakes (e.g., talus slopes, boulder fields, rocky outcrops, rocky right-of-ways). If the proposed project area supports habitat that is conducive for timber rattlesnakes, these areas will be the focus of the presence-absence survey effort.

Sampling Times and Targeted Search Areas

Timber rattlesnake surveys are to be conducted when rattlesnakes are active (i.e., no earlier than April 15, nor later than November 1, and when the mean ground temperature is $\geq 55^{\circ}$ Fahrenheit). Air temperatures should be at or above 60° Fahrenheit, and surveys should not be conducted during rain events. Surveys are to target areas that have high potential to support timber rattlesnakes (e.g., talus slopes, boulder fields, rocky outcrops, rocky right-of-ways). These targeted areas should be visited at a minimum of four (4) times on separate dates throughout the sampling season (April 15 – November 1).

Sampling times are to be focused at the beginning and end of their active season, when they are most likely to be detected:

- When the snakes are just emerging from potential den sites (early to mid-spring: April 15 – June 15; minimum of 2 separate surveys/site), and in the fall when they are congregating around the dens before winter dormancy (September 1 – November 1; minimum of 2 surveys/site).

OR

- Four (4) spring surveys at potential den sites (April 15 – May 31; minimum of 2 surveys/site, and June 1 – June 15; minimum of 2 surveys/site).

If denning areas can not be located, rookery sites and basking areas should be identified. Site visits should coincide with optimal weather conditions needed to detect rattlesnakes (days that include cool, sunny to partly cloudy mornings, and warm afternoons).

Methods/Handling

Timber rattlesnake surveys are to be conducted by qualified/recognized timber rattlesnake biologists who have the proper skills and permits (PFBC Scientific Collecting Permit) to handle this venomous species. Once the targeted areas and sampling times have been established, the targeted sites are to be visited by qualified personnel and their assistants only (see PFBC Scientific Collecting Permit). Although search ranges will vary with project location and size, in general, a search range should include the entire project area (including temporary and permanent impacts) and a minimum of 0.25-mile radius around the project boundary. Surveys are to target areas that have high potential to support timber rattlesnakes (e.g., talus slopes, boulder fields, rocky outcrops, rocky right-of-ways). Large flat rocks with sunlit southeast exposures should be the areas of focus. Dens, rookeries, basking areas, and/or individual occurrences are to be mapped and described accordingly.

Reporting Requirements

Upon completion of the timber rattlesnake presence-absence survey, the surveyor is to submit a report to this office (Natural Diversity Section) for review and consultation. Survey reports are to document both abiotic and biotic parameters observed. The survey report must include the following information:

- survey dates, names of surveying personnel, USGS 7.5 minute maps showing the project area relative to the survey location, start and end times, start and end temperature, relative humidity, wind strength, % cloud cover, other weather conditions, and calculation of person hours/search area.

The following information is to be recorded from timber rattlesnakes observed at the site:

- color phase, sex, total length, snout-vent length (SVL), and reproductive condition.

In addition, the following locational information and habitat descriptions are to be reported:

- exact location (latitude/longitude, located on topographic map), color photograph of animal(s), micro and macro habitat descriptions (vegetation descriptions, % cover, rock size and % cover), color photographs of habitat (dated, labeled, and keyed to a map), all herpetofauna seen, and any behavioral notes.

Any pertinent project information should also be reported: project narrative/description, exact project location, equipment to be used in earth moving activities, alternatives, etc. In the conclusions of the report, it is important for the rattlesnake surveyor to give his/her professional *opinion* or assessment of the potential impacts from the proposed project to the local population of timber rattlesnakes. Recommendations are welcomed. Be advised that the Natural Diversity Section may not agree with the assessment or recommendations.

Qualified/Recognized Personnel

Timber rattlesnake surveys may only be conducted by qualified surveyors using the appropriate methods and times necessary during the appropriate seasons to detect timber rattlesnakes. Please contact the Pennsylvania Fish and Boat Commission for a complete list of qualified/recognized surveyors (PFBC-NDS form number 4)*. The surveyors recognized by the PFBC have demonstrated the proper experience to identify timber rattlesnakes and their habitat, and have the proper collecting permits and skills necessary to handle this venomous species.

**Please note that Michael Torocco and Robert T. Zappalorti of Herpetological Associates, Inc. are both considered qualified/recognized surveyors by the PFBC, and are included on the State list.*