

Pine Barrens Treefrog

Hyla andersoni

Contributors: Stephen H. Bennett and Kurt A. Buhlmann

DESCRIPTION

Taxonomy and Basic Description

The pine barrens treefrog is a small member of the treefrog family, Hylidae. This species reaches lengths of 2.8 to 4.4 cm (1.1 to 1.7 inches); maximum length is approximately 5 cm (1.9 inches) (Conant and Collins 1991). The pine barrens treefrog is green with a broad lavender stripe on either side of the body. This stripe has a thin, white outline. The concealed portions of the legs and inner thigh are bright orange with numerous yellow dots (Martof et al. 1980).



Status

The pine barrens treefrog is listed as a Species in Need of Management in South Carolina with a rank of (S2/S3) statewide and apparently secure (G4) globally (NatureServe 2005).

POPULATION DISTRIBUTION AND SIZE



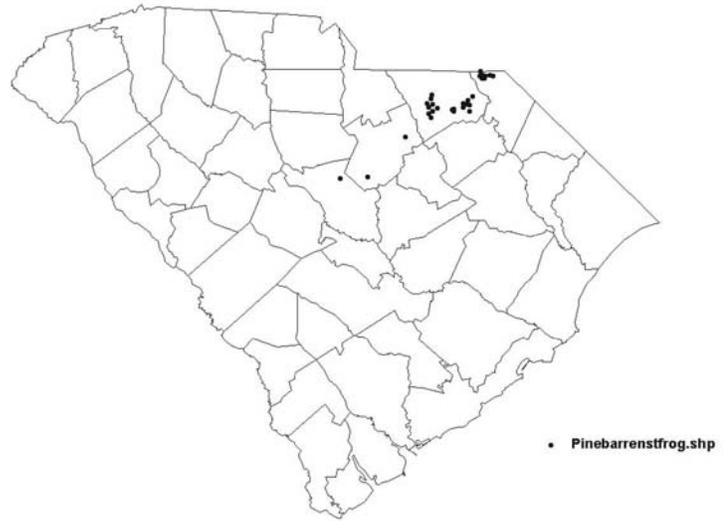
PINE BARRENS TREEFROG
Generalized Range Map of the Pine Barrens Treefrog in South Carolina
Adapted from Conant and Collins 1991

The pine barrens treefrog is found in the upper (northern) portion of South Carolina's coastal plain in the Sandhills (fall-line) Ecoregion. Between 1979 and 1982, Cely and Sorrow (1982) surveyed 222 potential treefrog sites in this region, and found that approximately 50 of them (23 percent) supported pine barrens treefrog colonies. Colony size ranged from a few frogs to several dozen, but larger colonies were difficult to estimate. During this study, the researchers used a mark-recapture method to develop a population estimate for one large colony. The estimate for this colony of 159 frogs was much higher than the 25 to 50 individuals originally estimated by call counts. The researchers concluded that estimates of pine barrens treefrog populations, based on call counts, would typically underestimate the actual population size.

The pine barrens treefrog was found to be more widespread in South Carolina than previously believed. Based on their findings, Cely and Sorrow recommended that the status of the frog be changed from endangered to threatened and considered a species in need of management in South Carolina.

Currently, no valid estimate exists for the number of extant pine barrens treefrog colonies in South Carolina or estimates for population size at any colony. The pine barrens treefrog has been found on two significant tracts of public property in Chesterfield County: the Sandhills National Wildlife Refuge (NWR) and the Sandhills State Forest. Garton and Sill (1977) found pine barrens treefrogs at 18 locations on the Carolina Sandhills NWR in 1977.

Element Occurrence Records for the Pine Barrens Treefrog in South Carolina



HABITAT AND NATURAL COMMUNITY REQUIREMENTS

In South Carolina, the pine barrens treefrog occurs in herb shrub bogs, pocosins and other related communities in the sandhills (Cely and Sorrow 1982; Conant and Collins 1991; Martof et al. 1980). Typical pine barrens treefrog habitat is found in transition zones on the down slopes of sandhills where water percolates out of the soil in some sort of seepage zone. Historically, these habitats would burn periodically, until European settlement in the southeast prompted exclusion of fire. Fire maintains an open character to the seepage bogs. Pitcher plants, sundews and terrestrial orchids are species that typify this habitat type and also require the acidic, open conditions of these bogs. Pine barrens treefrogs live in the thick, pocosin vegetation that often surrounds this habitat, but they also require the open, slow-flowing seeps as breeding habitat (Cely and Sorrow 1982)

Currently, several pine barrens treefrog colonies exist along power line and gas line rights-of-way, where mechanical vegetation control (mowing) keeps the vegetation low, maintaining the open habitat required by the species.

CHALLENGES

The primary challenge facing this species is habitat loss due to fire suppression and other inappropriate management activities such as herbicide application in power line rights-of-way, in the preferred herb-shrub bog habitat.

Ditching and drainage of small, hillside wetlands or other alteration of these wetlands is a potential threat to pine barrens treefrog populations.

CONSERVATION ACCOMPLISHMENTS

Several pine barrens treefrog populations occur on the Sandhills National Wildlife Refuge; managers are aware of these populations and the status of this species. The South Carolina Department of Natural Resources Heritage Trust Program has protected a population of the pine barrens treefrog through registration of a gas line rights-of-way in Kershaw County.

CONSERVATION ACTIONS:

- Acquire or obtain easement for private lands that contain populations of the pine barrens treefrog.
- Encourage public land managers to use the unique pine barrens treefrog to promote conservation of biodiversity in Carolina Sandhills NWR.
- Investigate the positive effects of an active fire management regime on the pine barrens treefrog on Carolina Sandhills NWR.
- Identify specific breeding populations of pine barrens treefrogs in South Carolina, including populations on Carolina Sandhills NWR. Monitor any populations identified during surveys.
- Investigate pine barrens treefrog life history to determine the status of protected populations.
- Advise SCDNR Environmental Review biologists about known or potential populations of the treefrog that occur in areas slated for draining or filling.

MEASURES OF SUCCESS

As results from current research and surveys or future efforts are identified and analyzed, projects will be initiated to address specific needs that arise from these results. Data from continued surveys will be used to develop site-specific management plans for this species. Stable or increasing populations at protected sites will be considered a measure of success.

LITERATURE CITED

- Camper, J. 1997. Herpetological Studies on the Carolina Sandhills National Wildlife Refuge. Unpublished Report.
- Cely, J.E. and J.A. Sorrow, Jr. 1982. Distribution, status and habitat of the pine barrens treefrog in South Carolina. Study Completion Report. South Carolina Wildlife and Marine Resources Department.
- Conant, R.C. and J.T. Collins. 1991. A Field Guide to Reptiles and Amphibians: Eastern and Central North America. Peterson Field Guide Series. Houghton Mifflin Co. Boston, Massachusetts. 450 pp.
- Garton, J.S. and B.L. Sill. 1977. The amphibians and reptiles of the Carolina Sandhills National Wildlife Refuge, Chesterfield County, South Carolina. Unpublished Report.

Martof, B. S., W. M. Palmer, J. R. Bailey and J. R. Harrison III. 1980. *Amphibians and Reptiles of the Carolinas and Virginia*. University of North Carolina Press. Chapel Hill, North Carolina. 264 pp.

NatureServe. 2005. NatureServe Explorer: An online encyclopedia of life [online web application]. Version 4.4. NatureServe, Arlington, Virginia. Accessed on May 30, 2005 at <http://www.natureserve.org/explorer>.