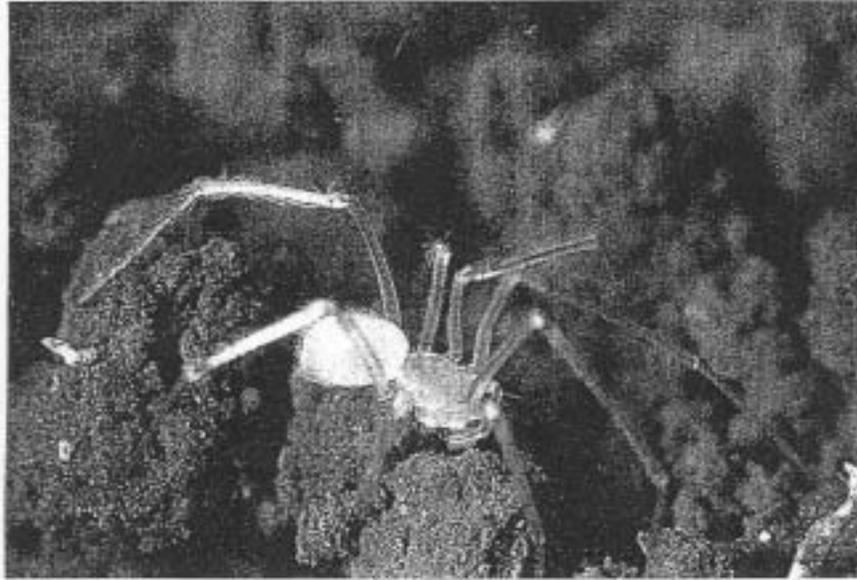


*Conservation Assessment
for
Carter Cave Spider (*Nesticus carteri*)*



(Photo: Gertsch, 1984)

USDA Forest Service, Eastern Region
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This Conservation Assessment was prepared to compile the published and unpublished information on Nesticus carteri. It does not represent a management decision by the U.S. Forest Service. Though the best scientific information available was used and subject experts were consulted in preparation of this document, it is expected that new information will arise. In the spirit of continuous learning and adaptive management, if you have information that will assist in conserving the subject community and associated taxa, please contact the Eastern Region of the Forest Service Threatened and Endangered Species Program at 310 Wisconsin Avenue, Milwaukee, Wisconsin 53203.

Table of Contents

EXECUTIVE SUMMARY 4
NOMENCLATURE AND TAXONOMY 4
DESCRIPTION OF SPECIES 4
LIFE HISTORY 4
HABITAT 5
DISTRIBUTION AND ABUNDANCE 5
RANGEWIDE STATUS 5
POPULATION BIOLOGY AND VIABILITY 5
POTENTIAL THREATS..... 5
**SUMMARY OF LAND OWNERSHIP AND EXISTING HABITAT
PROTECTION..... 6**
**SUMMARY OF MANAGEMENT AND CONSERVATION
ACTIVITIES 6**
RESEARCH AND MONITORING 6
RECOMMENDATIONS..... 6
REFERENCES..... 6

EXECUTIVE SUMMARY

The Carter Cave spider is designated as a Regional Forester Sensitive Species on the Hoosier National Forest in the Eastern Region of the Forest Service. The purpose of this document is to provide the background information necessary to prepare a Conservation Strategy, which will include management actions to conserve the species.

Nesticus carteri is a troglomorphic spider that occurs primarily in caves of the Appalachians of Kentucky, West Virginia, Virginia and Tennessee, and somewhat disjunctly in southern Indiana.

NOMENCLATURE AND TAXONOMY

Classification: Class Arachnida
Order Araneae
Family Nesticidae

Scientific name: Nesticus carteri

Common name: Carter Cave spider

Synonyms: none

The description of Nesticus carteri by Emerton (1875) was brief and accompanied by a single illustration of the female epigynum. Gertsch (1984), in a monographic treatment of the family Nesticidae in North America, redescribed Nesticus carteri, and provided illustrations for identification of the species.

DESCRIPTION OF SPECIES

Cave populations of this troglomorphic spider are usually pale in color, while surface populations range from pale to a bold dusky color with a blackish pattern on the carapace and abdomen. Maximum size of the spider is about 3mm. Identification of this spider requires microscopic examination by a specialist familiar with spider systematics.

LIFE HISTORY

Nothing is known of the life history of Nesticus carteri, although Gertsch (1984) provided a summary of some information available on the related spider Nesticus cellulanus which are repeated here. The male spins a tiny, four-cornered sperm web and takes the sperm into his palpi by direct application of the emboli. Courtship consists of plucking the threads of the web and stroking the body of the female with the front legs. The female responds by similar stroking with her front legs. The male crawls beneath the abdomen of the female, facing in the same direction, and applies the palpi to the epigynum one at a time. The several insertions last only a few minutes. The egg sacs of Nesticus cellulanus are spherical, about 4mm in diameter, and thinly covered with

transparent white silk. The sac holds up to 96 eggs. Females are known to drag the egg sacs with them, attached to the spinnerets. Since nesticids stray little from their webs, this may serve a protective function.

HABITAT

This species is known primarily from the total darkness zone of caves, as well as a few surface collections from detritus and rotting wood. All of the nesticids are aerial web spinners that hang suspended from fine reticular webs placed in crevices.

DISTRIBUTION AND ABUNDANCE

This species occurs somewhat disjunctly in southern Indiana and despite many seemingly suitable caves, the populations are sporadic. Nesticus carteri has been reported from Bradford Cave, Harrison County (Packard, 1873), Marengo Cave, Crawford County (Blatchley, 1897), and Mayfields and Truetts caves, in Monroe County (Banta, 1907). Of these four sites, the first three have been revisited by Lewis (1998) and Nesticus carteri could not be found. Only two extant populations of the spider are known in Indiana, Heron Cave (Crawford County) and Wallier Cave (Harrison County) (Lewis, 1998). The majority of the records are from the Appalachian Mountains in eastern Kentucky, West Virginia, western Virginia and eastern Tennessee (Gertsch, 1984).

RANGEWIDE STATUS

Global Rank: G3 vulnerable; The global rank of G3 is assigned to species that have been found in 21-100 sites. Gertsch (1984) reported Nesticus carteri from about 50 sites.

Indiana State Rank: S1 critically imperiled; The state rank of S1 is assigned to a species that has been found in 1-5 sites within the state. As noted above, there are only two sites from which Nesticus carteri certainly remains extant in Indiana.

POPULATION BIOLOGY AND VIABILITY

Nothing is known of the population biology of this species, but some data is known concerning the related European species Nesticus cellulanus (Gerhardt, 1972; Wiehle, 1953; summarized by Gertsch, 1984).

POTENTIAL THREATS

General threats to caves and cave animals were discussed by Keith (1988). Within the Hoosier National Forest boundary, Nesticus carteri is known from a cave that appears to be rarely visited and in little danger of being disturbed.

SUMMARY OF LAND OWNERSHIP AND EXISTING HABITAT PROTECTION

This species occurs in Heron Cave, Crawford Co., a privately owned site within the boundary of the Hoosier National Forest. Blatchley (1897) reported Nesticus carteri from Marengo Cave, which is a commercial cave that is gated and locked, but the spider has not been found there recently (Lewis, 1998).

SUMMARY OF MANAGEMENT AND CONSERVATION ACTIVITIES

There are no species specific management activities concerning Nesticus carteri. This species is presently unknown from a site managed by the Hoosier National Forest.

RESEARCH AND MONITORING

A bioinventory of caves of the Hoosier National Forest revealed no new localities for this species (Lewis, et al., 2002; and in progress).

RECOMMENDATIONS

Retain on list of Regional Forester Sensitive Species.

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