

Application for a Research Permit for The BNP

Permit 2006-009

Name (Last, First, MI): **Blackledge, Todd A.**

Date: **25 – May - 2006**

Affiliation: **Assistant Professor, The University of Akron**

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Title of Research: **Ontogeny and the development of cobwebs in the Common House Spider**

Briefly describe the research to be conducted at the BNP in non-technical language (this paragraph will be used in describing your research to the public).

This project will explore age-related changes in the web-spinning behaviors of a common cobweb spider. The Common House Spider, *Achaearanea tepidariorum*, spins large three-dimensional cobwebs in protected areas around basements, garages, outbuildings, and overhanging cliff faces. As the spiders mature, their webs can increase greatly in size but these changes have never been studied. We study how the size and shapes of webs, as well as the structural properties of the silk used to spin those webs, varies as a function of the age of spiders. We will initially study this in the laboratory at UAkron using spiders collected from the Martin Field Station Building. We will then conduct a field study within the Gazebo on the field station property where we monitor the webs spun by tagged spiders in this “natural” setting. *Achaearanea* is abundant in both the Gazebo and the Martin Field Station Building.

Briefly describe the goals of the proposed research.

This project is designed to test the hypothesis that the shapes of cobwebs vary allometrically with the body sizes of spiders (i.e. that spiders do not fundamentally change their web-spinning behaviors as they mature.)

On which research areas of the preserve will your research occur?

All research will be conducted in the Martin Field Station Building (basement and garage) and the outlying Gazebo.

What are the GPS coordinates or locations of your proposed research?

NA

Does your proposal involve areas that are not part of the designated research areas?

No

(if yes, this permit will require approval from the Bath Trustees – this can only be sought four times a year, and so approval of your permit may take up to several months). Talk with the BNP Committee for more details.

What is the expected duration of your proposed research?

Summer 2006 - 2007

What is the Web address of your research outline?

<http://www3.uakron.edu/biology/blackledge/tab.htm>

Briefly outline of methods to be used. Be sure to include outlines of the equipment to be used (if any) in the research.

This study will involve the collection of some spiders from within buildings. They will be

housed in the BRC facility at UAkron and their web-spinning monitored through

photography and collection of silk samples for mechanical analysis. Some spiders will be

released back into their natural habitat (the Gazebo building), after being tagged for identification, and their web-spinning behaviors and prey capture measured.

Outline the use of markers/cages/fences/etc. for your research. Note: in receiving a research permit, you must agree to remove all such research tools at the completion of your study.

Bee tags or paint dots will be used to mark the released spiders.

What is the potential impact of your research on nature preserve?

There is little impact expected. These spiders are extraordinarily abundant around human habitations throughout most of the globe and the BNP. They are in fact a well-established non-native species in Ohio that doesn't seem to have detrimental impacts because of their preference for human habitations.

Have you looked at the listings and web sites of the research being conducted at BNP?

<http://www3.uakron.edu/biology/bath/active.html>

Yes

Are there any potential conflicts of your research with others at BNP? **No – nobody is**

currently conducting research inside buildings at the BNP.

To be granted a research permit for work at the BNP, you must agree to the following terms:

Researchers are responsible for obtaining the appropriate state or federal permits for the conduct of their research on the BNP (e.g., when working with regulated species).

Researchers are responsible for removing all markers, etc. from their research plots when the research is completed.

Researchers must build a web site (immediately after being granted a permit) outlining their research at the BNP so that other researchers can avoid the proposed research site(s). Therefore, the web site must clearly outline, using one or more maps, the exact location(s) of the proposed research.

Researchers will file an annual (due in yearly increments based on the date of the permit) and final report. Such reports will include: user days on the BNP, a summary of results of the project(s), a list of

data generated and contact information for those interested in the data, and a list of publications resulting from the project(s).

Any publications resulting from research conducted at the BNP must acknowledge the use of the preserve by referencing the BNP permit number. A copy of any such publication should be filed with the BNP committee.

To abide by the rules and regulations of the BNP in any and all conduct of research at the BNP.

By signing the request for a BNP research permit below, I agree to the above terms and state that all of the above information is correct to the best of my knowledge. I also agree to amend my above permit request if my research plans change such that they are no longer well represented in the information supplied in this permit request. If I fail to notify the BNP oversight committee of significant changes in my research, or if I do not follow the rules of the BNP, I realize that the BNP oversight committee can revoke my research permit, and disallow any further work by me, research or otherwise, at the BNP.

Signature: _____ Todd Blackledge _____

Date: 25-May-2006

Print Name: Todd A. Blackledge

University of Akron: _____

Date: _____