

Application for a Research Permit for The BNP

Permit 2005-004

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

Date: **17 – March - 2005**

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

Email address: Blackledge@uakron.edu

MailingAddress: **Department of Biology, University of Akron, Akron, OH 44325-3908**

Title of Research: **Exploration of silk production by spiders**

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).

Spiders are dominant predators of insects in forest and field ecosystems and are unique in their reliance upon silk for a variety of activities such as reproduction, prey capture, defense, and dispersal. A single spider may produce as many as seven distinct types of silk, some which are as strong as steel while others are as stretchy as rubber. I am currently conducting studies to characterize the mechanical properties of the silks spun by a diversity of spiders to better understand the evolution of this biological super-material. This research includes collecting a diversity of spiders in the field and harvesting silk directly from webs in the field for characterization in the laboratory.

Briefly describe the goals of the proposed research.

To collect a diversity of spiders that spin silk under a variety of different ecological conditions. This will allow me to better understand the diversity of the mechanical properties of the silks produced by spiders.

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

Some species of spiders can be very habitat specific. Therefore, I anticipate collecting in all areas of the preserve from time to time.

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

See above

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

YES

(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 2005 - Summer 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.

All collecting will be done by hand. Primarily spiders will be collected directly into vials or via sweepnetting. Silk samples will be adhered to cardstock and then cutout of webs.

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.

None will be used.

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

There is little impact expected. Spiders are generally quite abundant and this research involves collecting only small numbers of any one species – typically 5 to 10 individuals over the course of the multiyear study.

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**

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: 17-March-2005

Print Name: Todd A. Blackledge

Approval:

Bath Township: _____

Date: _____

University of Akron: _____

Date: _____