



## Deer Exclosure Research At Lacawac Sanctuary

*By: Evan Wilson and Amelia Fleitz, 2015 Lacawac intern*

*The results described in this article were featured in two of Dr. Dave Byman's published articles: 1) Demographic Effects of White-tailed Deer (*Odocoileus virginianus*) Exclosures on White-footed mice (*Peromyscus lecopus*) published in the July 2013 issue of American Midland Naturalist and 2) The Effects of Deer Exclosures on Voles and Shrews in Two Forest Habitats published in 2011 in Northeastern Naturalist.*

Ever since top predators, such as wolves, were removed or hunted out of their native ranges, the white-tailed deer populations have grown so large that many other species are being impacted. Deer only consume certain species of young trees, which make up a significant portion of the understory here at Lacawac Sanctuary. These young trees provide shelter and food resources for many small woodland mammals. Previous research conducted on growing deer populations looked at how bird species were impacted by the lack of understory growth, however not much was known about how it impacts small mammals. Dr. Dave Byman of Penn State Worthington Scranton set out to study how a large deer population impacted the small mammal populations found in the forest at Lacawac Sanctuary.

Every week May through September of 1996 to 2005, Dr. Byman sampled mouse, vole, and shrew populations inside and outside Lacawac's deer exclosures. The exclosures prevented deer from entering the space, but allowed smaller species to travel freely. Byman began his study by placing baited traps for the small mammals inside and outside of the exclosures. Once captured, Byman safely measured, weighed and sexed the individuals while ear-tagging the white-footed mice and marking the shrews and voles. By marking the individuals Byman was able to construct an estimate of how many shrews, voles and mice were living in the exclosures compared to the surrounding forested area. For example, if the same few shrews were caught repeatedly, this would indicate that the

population of shrews in that area was small. If unmarked shrews frequently were caught, it would suggest that the shrew population was large. Various squirrel species, Woodland Jumping Mice and even a juvenile Virginia Opossum were also caught and safely released during this experiment.

At the end of the 10 year study, Byman saw clear trends in the populations. After review, some



*Dr. Dave Byman, assistant professor of biology at Penn State Worthington Scranton, actively conducts research in Lacawac's deer exclosures and is on Lacawac's Science Committee.*

species of vole and shrew were not found often enough to provide a solid collection of data, and consequently, were excluded from the study's results. Byman did find evidence that supported the hypothesis that the high deer populations at Lacawac Sanctuary had affected the shrew and vole species negatively. Specifically the Northern Red-backed Vole and Woodland Vole populations had a greater density of individuals inside the exclosures than outside. Meaning, that the lack of understory cover outside of the exclosures limited the available habitat for the shrews and voles. The lack of understory also

leaves the shrews and voles more vulnerable to predators, such as owls.

Next Byman collaborated with Shannon D. Harding and Francis W. Spear to answer if large deer populations were negatively impacting the white-footed mouse population at Lacawac Sanctuary. The team discovered that the exclosures, absent of deer, allowed the white-footed mouse population to sustain a larger population. The data showed that the mouse population had a higher density inside the exclosure than outside. The scientists also found that the population inside the exclosures had a greater proportion of large females than outside. It is possible that the higher quantity and quality of food resources inside the exclosures play a role in the larger individual size and population density. Byman is currently working on a 5 year project studying how habitat quality and food quantity inside and outside the exclosures impact the small mammal populations.

## SUMMER PROGRAMS AT LACAWAC

Visit [lacawac.org](http://lacawac.org) or Facebook for full program details. Lacawac members receive a discount to most programs. To register, email [info@lacawac.org](mailto:info@lacawac.org) or call (570) 689-9494.

**CE** Community Event: These events are opportunities to mingle with your like-minded neighbors and network with conservation organizations in a fun and friendly atmosphere.

**PP** Public Program: These programs are great for all audiences.

**PreK** PreKindergarten: Programs geared towards children 3-4 years old.

**K-12** Kindergarten to 12<sup>th</sup> grade: Programs suitable for children 5-18 years old.

**CS** Citizen Science: Participants play an active role in scientific research and often work cooperatively with scientists and naturalist professionals. Suitable for scouts, school groups, environmental clubs and students/adults with a high level of interest in environmental science and research.

**AC** Art Community: Events and workshops that incorporate our natural resource preservation initiative with multi-media art and music lovers.

**\*Free Public Program:** No membership required

### Summer Nature Series for Kids (K-4)

**July 1 to July 18** **10 a.m. to noon**

**Wednesdays at Wallenpaupack Environmental Learning Center**

**Saturdays at Lacawac Sanctuary**

Environmental educator, Jenna Wayne Mauder is excited to continue offering this series to the Lake Region! Each program is geared towards budding junior naturalists,

aged 5-10 years, and presented by Jenna and/or a partnering conservation organization. Children must be accompanied by an adult. Registration is limited. Find full descriptions of each program after Earth Day on [www.lacawac.org](http://www.lacawac.org) and Facebook.

*Registration fee: \$10 per program or all 6 for \$50.*

*Members discount: \$5 per program or all 6 for \$30.*

### \*Walkabout the Partner Ridge (PP)

**Saturday, July 11**

**10 a.m. to noon**

**Meet at the Coulter Visitor's Center**

Join Delaware Highland Conservancy's Jamie Bartholomew as she leads a hike along this protected mature oak forest boasting awesome geological features. Bring your water bottles and questions about protecting land. *This program is free; registration is appreciated.*

### The Young Geezers American Music Concert

**Sunday, July 12**

**3 p.m.**

**Carriage House**

This charming and melodic folk, gospel and bluegrass trio has been filling the house at Lacawac for the past six years. Their programs of American music offer an intriguing mix of great vocal harmonies and fine acoustic instrumentation, plus anecdotes to amuse. They bring something new, something old, and something different each time they visit! *\$15 per person; \$10 members. Registration is appreciated.*

### Playing in a Band Workshop (AC)

**Saturday, July 25**

**9 a.m.-11 a.m.**

**Presented by Simple Gifts**

**Boiler Room inside the Hawley Silk Mill**

Bring your instrument or voice and be part of a band in this 2-hour workshop! Together we'll arrange a piece of music to perform during the afternoon concert with Simple Gifts. All instruments (including voice) and skill levels (including total non-musicians!) are welcome. There's a place for everyone in this band! Watch videos and learn more about the band Simple Gifts at [www.simplegiftsmusic.com](http://www.simplegiftsmusic.com). This workshop is offered in collaboration with Harmony Presents ([silkmillharmony.com](http://silkmillharmony.com)) and is generously supported by The Pennsylvania Partners in the Arts, a joint effort of the PA Council on the Arts and the Pocono Arts Council. Registration required and includes admission for the World Music Celebration.

*Registration fee: \$30 per person; \$20 Lacawac members.*

*More information at [lacawac.org](http://lacawac.org) and Facebook*

*Register by email to [info@lacawac.org](mailto:info@lacawac.org).*

### **World Music Celebration Concert (AC)**

**Saturday, July 25 1 p.m.**

#### **Boiler Room inside the Hawley Silk Mill**

Two women plus twelve instruments equals one good time when Simple Gifts takes the stage! This award-winning band performs on an impressive array of instruments, including fiddles, mandolin, hammered dulcimer, recorders and banjo, plus some more unusual instruments like the bowed psaltery, gaitjo and doumbek. With sounds that range from lively Irish jigs and down-home American reels to hard-driving Klezmer freilachs, haunting Gypsy melodies and exotic Balkan dance tunes, Simple Gifts presents their music with a rare intensity and contagious enthusiasm. This is an act not to be missed! The concert is offered in collaboration with Harmony Presents ([silkmillharmony.com](http://silkmillharmony.com)) and is generously supported by The Pennsylvania Partners in the Arts, a joint effort of the PA Council on the Arts and the Pocono Arts Council.

*Concert Tickets: Early Bird \$15, General \$20*

*Tickets can be purchased online at [simplegiftshawley.bpt.me](http://simplegiftshawley.bpt.me) or at the door upon availability.*

### **Watercolors weekend in the Great Lodge (AC)**

**August 7-9 Lacawac Sanctuary**

Take your painting skills to the next level during this intensive program that focuses on both basic and advanced skills in landscape painting. Lacawac offers a range of spectacular subjects and watercolors are especially suited to capturing and expressing that beauty. Nationally-known instructors Renee Emanuel and Bill Teitsworth have collected numerous awards for their watercolor and acrylic paintings, and they are inspiring teachers! So come and hone your painting skills in this beautiful natural setting, and enjoy the ambiance of our historic Great Camp.

Check-in and dinner on Friday from 5-7 p.m. followed by Meet-the-Artists and a mini-lesson. Saturday includes a demo and lesson, followed by painting with individual instruction and a Power Point presentation called "The Contemporary Landscape." Another demo and lesson on Sunday with time for individual work and a critique before departure around 5 p.m.

*Registration Fee: \$175, Members \$140 (includes meals except for breakfast).*

*Optional Lodging Fee: \$70 (includes breakfast)*

### **Summer Nature Series for Tots (PreK)**

**August 12 to August 22 10-11:30 a.m.**

#### **Wednesdays at the Wallenpaupack Environmental Learning Center Saturdays at Lacawac Sanctuary**

Children and adults are invited to explore our natural world together. This series focuses on connecting to nature using our senses and taking a closer look at critters in the wild. Join us and our partnering conservations organizations for these programs geared towards children ages 2-4 and an adult. Registration is limited. Full program descriptions available after Earth Day at [lacawac.org](http://lacawac.org) and on Facebook.

*Registration fee: \$10 per program; all 4 for \$35.*

*Members discount: \$5 per program or all 4 for \$20.*

### **Live Birds of Prey**

**Saturday, August 22 5 p.m.**

#### **Wallenpaupack Environmental Learning Center**

Lacawac Sanctuary is proud to present the Delaware Valley Raptor Center's live birds presentation at the Wallenpaupack Environmental Learning Center. Let these magnificent creatures captivate you and leave you yearning to learn more. Activities for younger children will be available. *No registration, seating is first come, first served. Adults \$10; children \$3; children under 2 are free.*

### **Wild Edibles Walk (PP)**

**Saturday, August 29 10 a.m. to noon**

**Meet at the Coulter Visitor's Center, Lacawac Sanctuary**  
Local forger, Nathaniel Whitmore will lead a walk around the sanctuary in search of edible mushrooms, plant roots, seeds and leaves. Let Nathaniel share his wealth of knowledge in forging with you on this excursion. *\$10 per person; members \$5 per person.*

### **Yoga At Lacawac**

**August 29, 1 p.m. August 30, 10:30 a.m.**

Enjoy a Restorative Yoga class with Diane Rixner of Bend Yoga. Classes are \$8.00 each. Reiki sessions will also be available at \$1.00/minute (15-60 minutes per session). Overnight rooms on Friday and/or Saturday are available at \$25 per night. *Registration for Yoga class is appreciated.*

### **The Young Geezers American Music Concert II Sunday, August 30 3 p.m.**

#### **Carriage House**

*See earlier description on July 12. \$15 per person; \$10 members. Registration is appreciated.*



# Tapas, Tunes & Toasts



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*Celebrating Wayne County through food, drink & music!*

The Tapas, Tunes & Toasts fundraiser will be an evening of lake-region offerings, highlighting locally produced wine, a tapas-style menu featuring dishes made using Wayne County grown/produced products and live musical entertainment!

**Tapas:** Evening will feature farm-to-table catering by The Anthill Farm Kitchen.

**Tunes:** Based in NYC and Northeast PA the Jazz Assassins feature Vince Marrone on guitar and Bob Wilson on bass.

**Toasts:** Wood Winery, located on the Endless Mountains Wine Trail in Northeast Pennsylvania, is a family owned and operated business where quality wines are hand crafted in small batches.

**Date: Thursday June 25th**

**Location: The Cooprage Project, Honesdale**

**Time: 6-8 pm**

**Cost: \$25 per person (21+)**

**Purchase Tickets online at <http://lacawactapas.bpt.me>**

**More information call 570-689-9494**

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