

# Bats Northwest

## News



BNW IS A NON-PROFIT, ALL VOLUNTEER CONSERVATION ORGANIZATION

WINTER 2013/2014

### First Spotted Bat Museum Specimen in Washington State!

*By Slater Museum of Natural History - Puget Sound Museum*

The first Spotted Bat specimen for Washington state debuted at Bat Night at the Slater Museum of Natural History on Oct 30, 2013!

The specimen was found in a local high school classroom near Tacoma and was eventually passed on to Greg Falxa of Cascadia Research. The bat died despite attempts at rescue and was deposited at the Slater. It was prepared as a standard skin/skull voucher specimen with associated issue for genetic analysis and post cranial skeleton and dried muscle for stable isotope analysis. If feasible, stable isotopes might provide clues to the bat's mysterious appearance in Western Washington. Typically

this species is confined to drier areas of Eastern Washington, however they are difficult to find and study. They are migratory so the specimen we received might have been wandering, lost or a disoriented migrant. The species status in Washington has yet to be determined.

Our specimen is the 69th spotted bat specimen housed in the 46 institutions in the online VertNet consortium. Including the Slater, 13 of 46 institutions have spotted bats. Most of the specimens are from New Mexico (29), Utah (10) and California (8). The Slater specimen is the northern most specimen.

[http://www.batsnorthwest.org/euma\\_meet.html](http://www.batsnorthwest.org/euma_meet.html)



Photos by the Slater Museum of Natural History



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BNW Meetings!

Second Tuesday,  
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of Bats is Understood

Where the Public Recognizes  
the Vital Place of Bats In Our  
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Where All are Inspired by the  
Remarkable Attributes and  
Invaluable Contribution of  
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## Protecting Bracken Cave Bats Should Be a Priority

<http://www.mysanantonio.com/default/article/Protecting-Bracken-Cave-bats-should-be-a-priority-5059598.php>

SAN ANTONIO — It's hard to say what's more surprising: a Dallas development company's interest in land next to millions of bats at Bracken Cave, or its cavalier attitude about those bats.

Stratford Land is under contract with Galo Properties, owner of about 1,500 acres adjacent to Bracken Cave. The site has been a hotbed of controversy ever since Galo's plans for up to 3,500 homes there became public this spring.

Conservationists, including The Nature Conservancy and Bat Conservation International, which owns Bracken Cave, have expressed concern about human-bat interactions.

Thought to be the world's largest maternal bat colony, Bracken Cave is the spring and summer home of millions and millions of Mexican free-tailed bats. According to BCI, roughly 10 million bats roost there. The concern is that, if thousands of homes are built nearby, rabies incidents will follow and the bat colony will be threatened.

"It's the largest maternal bat colony in the world, and we have gotta be very careful from an ecological standpoint not to disrupt the balance that we have got there," said State Rep. Lyle Larson, R-San Antonio.

That's where Stratford Land comes into play.

For months, BCI and others have been meeting with representatives from Galo Properties about somehow forging a deal to preserve land around the bats. It was slow going for numerous reasons.

Now Stratford Land is under contract with Galo.

If a sale occurs, the dynamic remains unchanged: A developer wants to build homes near the bat colony. But there is at least a public difference, which is Stratford's dismissive take on the bats.

"There's bats all over Central Texas, and we don't think they are any more at risk," said Steve Sanders, of Stratford Land.

Sanders noted there is already a neighborhood near the bats, and there aren't any issues with the bat colony under the Congress Avenue Bridge in Austin.

"Why is it OK in downtown Austin, but it's not OK here? I don't get it."

The Bracken Cave is a maternal colony with younger bats. It also has significantly more bats than Congress Avenue's colony of 1.5 million.

Residential housing, with pools, patios and yards, is far different than dense urban office buildings and apartments. Bats also play a crucial agricultural role, consuming tons and tons of bugs.

But perhaps most importantly, the community has shown intense concern about the bats from across the political spectrum.

Why anyone would want to be at the center of such heat is beyond us. But hope is not lost.

Those on the conservation side believe a deal can be struck with Stratford after it closes with Galo. Put another way, despite Stratford's rhetoric, a deal may be possible to save the bats.

For months now, San Antonio City Councilman Ron Nirenberg has been shepherding various public interests to assist BCI and the Nature Conservancy with an acquisition.

This is far more difficult than it sounds. The land is in both Comal County and the city's extraterritorial jurisdiction, and there are complicated politics at play about funding sources, water flow from the Edwards Aquifer and property rights.

But Nirenberg, Larson and several other leaders should be praised for their efforts on this most-important issue. It would be easier just to duck it than seek a solution.

We are generally supportive of growth. It is a key player in San Antonio's economy, driving important jobs.

But the bats at Bracken Cave are truly a treasure. It would be a shame to lose them through something as ordinary as sprawl.



Photo By Billy Calzada / San Antonio Express-News  
The millions of Mexican free-tailed bats at Bracken Cave are a treasure.

# Bats Drop Dead From Trees: Australia Sizzles Under Record Heat

The heat wave in Australia has taken a toll on wildlife, with bats dropping from trees and kangaroos collapsing.

By ROD McGUIRK

The Associated Press

CANBERRA, Australia — Bats are dropping from trees, kangaroos are collapsing in the Outback and gardens are turning brown.

While much of North America freezes under record low temperatures, the Southern Hemisphere is experiencing the opposite extreme as heat records are being set in Australia after the hottest year ever.

Weather forecasters in Australia said some parts of the sparsely populated Pilbara region along the rugged northwest coast were approaching 122 degrees Fahrenheit on Thursday.

The record high of 123.3 F was set in 1960 in Oodnadatta, South Australia state.

Outback resident Gian Tate, 60, spends much of the day soaking in a small wading pool at home near Emu Creek in the Pilbara region, an area off the electric grid.

The thermometer outside her home hit 122 F on Wednesday, she said.

Tate and her husband rely on two electric fans to cope with the heat and rarely turn on the small air conditioner in their bedroom because of the high cost of fuel to run their generator.

"We've just got to live with it; there's nothing you can do," she said.

Brazil is also sizzling, with the heat index reaching 120 Fahrenheit.

Since Dec. 27, records have been set at 34 locations across Australia — some by large margins — where temperature data has been collected for at least 40 years mostly in Queensland and New South Wales states.

The heat wave in Australia has taken a toll on wildlife.

In Winton, famous for being one of the hottest spots in Queensland and where Australia's unofficial anthem, "Waltzing Matilda," was penned, a large number of parrots, kangaroos and emus have recently been found dead, said Tom Upton, chief executive of Winton Shire Council.

At least 50,000 bats had been killed by the heat in the state's southeast, said Louise Saunders, president of the Queensland animal-welfare group Bat Conservation and Rescue.

Heat-stressed bats — including the black flying foxes, little red flying foxes and the endangered gray-headed flying foxes — cling to trees and urinate on themselves in a bid to reduce their body temperatures, she said.

"As they succumb, they just fall in heaps at the base of trees," Saunders said.

"You can have 250 or more ... all dying at the base of trees."

"It's an enormous animal-welfare concern," she added.

## Our Mission

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Where the Essential Role  
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Heritage



These heat-stressed baby bats are fed and treated at the Australian Bat Clinic in Queensland. *Trish Wimberley/AP*



Dayboro resident Murray Paas filmed the "carnage" on his property.

Many bat sites on the Web provide worthy information and great photos from around the world.

BATS NORTHWEST is focused on our regional bats, but there is so much to learn about bat conservation worldwide. You may enjoy visiting some of the sites listed on our Resource Page at:

<http://batsnorthwest.org/resources.html>



## Northern Long-Eared Bat *Myotis septentrionalis*

The northern long-eared bat has been proposed to be federally listed as an endangered species under the Endangered Species Act.

Endangered species are animals and plants that are in danger of becoming extinct. Identifying, protecting, and restoring endangered and threatened species are primary objectives of the U.S. Fish and Wildlife Service's endangered species program.

### What is the northern long-eared bat?

**Appearance:** The northern long-eared bat is a medium-sized bat about 3 to 3.7 inches but with a wingspan of 9 to 10 inches. Its fur color can be medium to dark brown on the back and tawny to pale-brown on the underside. As its name suggests, this bat is distinguished by its long ears, particularly as compared to other bats in its genus, *Myotis*, which are actually bats noted for their small ears (*Myotis* means mouse-eared).

**Winter Habitat:** Northern long-eared bats spend winter hibernating in caves and mines, called hibernacula. They typically use large caves or mines with large passages and entrances; constant temperatures; and high humidity with no air currents. Specific areas where they hibernate have very high humidity, so much so that droplets of water are often seen on their fur.

Within hibernacula, surveyors find them in small crevices or cracks, often with only the nose and ears visible.

**Summer Habitat:** During summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on suitability to retain bark or provide cavities or crevices. It has also been found, rarely, roosting in structures like barns and sheds.

**Reproduction:** Breeding begins in late summer or early fall when males begin swarming near hibernacula.

After copulation, females store sperm during hibernation until spring, when they emerge from their hibernacula, ovulate, and the stored sperm fertilizes an egg. This strategy is called delayed fertilization.

After fertilization, pregnant females migrate to summer areas where they roost in small colonies and give birth to a single pup. Maternity colonies, with young, generally have 30 to 60 bats, although larger maternity colonies have been observed. Most females within a maternity colony give birth



Photo by Steve Taylor; University of Illinois

around the same time, which may occur from late May or early June to late July, depending where the colony is located within the species' range. Young bats start flying by 18 to 21 days after birth.

Adult northern long-eared bats can live up to 19 years.

**Feeding Habits:** Northern long-eared bats emerge at dusk to fly through the understory of forested hillsides and ridges feeding on moths, flies, leafhoppers, caddisflies, and beetles, which they catch while in flight using echolocation. This bat also feeds by gleaning motionless insects from vegetation and water surfaces.

**Range:** The range of the northern long-eared bat includes much of the eastern and north central United States, and all Canadian provinces from the Atlantic Ocean west to the southern Yukon Territory and British Columbia. Within the United States, this area includes the following 39 States: Alabama, Arkansas, Connecticut, Delaware, the District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Vermont, Virginia, West Virginia, Wisconsin, and Wyoming.

### Why is the northern long-eared bat in danger of extinction?

**White-nose Syndrome:** No other threat is as severe and immediate as the disease, white-nose syndrome. If this disease had not emerged, it is unlikely the northern long-eared population would be declining so dramatically. Since symptoms were first observed in New York in 2006, white-nose syndrome has spread rapidly from the Northeast to the Midwest and Southeast; an area that includes the core of the northern long-eared bat's range where it was most common before this disease.

Numbers have declined by 99 percent in the Northeast.

**Read More:** <http://www.fws.gov/midwest/endangered/mammals/nlba/pdf/NLBAFactSheet27Sept2013.pdf>  
<http://www.fws.gov/midwest/endangered/mammals/nlba/pdf/NLEBinterimGuidance6Jan2014.pdf>

# 16th International Bat Research Conference and 43rd North American Symposium on Bat Research – Costa Rica 2013

By Meg Lunnum

Barb Ogaard and Meg Lunnum, Board of Directors of Bats Northwest, were off again on a great trip to Costa Rica to learn more about bats. The 16th International Bat Research Conference and the 43rd North American Symposium on Bat Research was held in San Jose, Costa Rica during the week of August 11 – 15. There were 639 attendees from 55 countries. Dr. Nancy Simmons, Curator-in-Charge, Department Mammalogy, American Museum Natural History updated the number of bat species in the world to 1,293. Bats also pollinate over 500 products.

To show some of the diversity of presenters, the first plenary speaker was Rodrigo Medellin, a Senior Professor of Ecology at the Institute of Ecology of UNAM (Mexico) whose topic was “Chasing Ghosts, Tongues, Noses, and Wrinkles: Challenges and Opportunities Working on Bats in Mexico”, Professor Medellin is the Co-Chair of the IUCN Bat Specialist Group and created the Latin American Bat Research Network (RELCOM); the Tuesday plenary was given by Marco Tschapka who is based at the University of Ulm, Germany. Because of Marco’s association with the Smithsonian Tropical Research Institute in Panama, his talk was on “Flowers and Bats – A Not Always Easy Partnership” and his focus is on the interactions between Neotropical bats and plants, especially with chiropterophilous flowers.

Professor Gary McCracken was the Wednesday plenary speaker, “Nature’s Options Values: the Ecological-economics of Insect-eating Bats”. Professor McCracken is Head of the Department of Ecology and Evolutionary Biology at the University of Tennessee and has done research on the foraging capabilities of Mexican Free Tail bats over crops in Texas. The last plenary speaker, Dan Janzen, helped establish the *Area de Conservación Guanacaste*, one of the oldest, largest and most successful habitat restoration projects in the world, and helped found a research organization that inventories, catalogs, and describes the Costa Rican gigantic natural endowment. Professor Janzen is a professor of biology from the University of Pennsylvania, his topic was – “Tropical Conservation by Means of Biodiversity Development: a Real Costa Rican Example”.

There are 39 native species of Heliconia in Costa Rica, most are pollinated by hummingbirds. The flowers are not really

flowers, but bracts or modified leaf-like structures called inflorescence. Heliconias only release nectar from a few flowers at any given time, in very small quantities; this strategy forces the humming birds to visit many plants in bloom for cross pollination.

During the conference, a film about Heliconia and the plant’s visitors, “Hotel Heliconia”, was shown. Phil Savoie, the filmmaker and photographer, discussed the making of the film. He was a fun speaker as well as a gifted filmmaker. “The story of the Heliconia plant, a jungle B&B. It’s tenants include dazzling hummingbirds, rare white bats, gaudy frogs, stunning yellow vipers, and buzzing metallic mosquitoes to name a few. All of the guests have something to gain from their visit - they can check out any time they like, but can they ever leave?” It really was a fun look into the flora and fauna of Costa Rica. If you ever get a chance to view this film, you should.

Some of the categories for presentations were: Environmental Education and Communication: What Have You Done That Works; White-Nose Syndrome, A Disease of Hibernating Bats; Behavioral Ecology of Bats; and Landscape Ecology: Hunting Prey, Pollinating Flowers, and Dispensing Seeds. The final program is available at: [http://www.ibrc2013.com/pdf/ibrc\\_program2013\\_low.pdf](http://www.ibrc2013.com/pdf/ibrc_program2013_low.pdf)

There were four days of concurrent presentations, so you couldn’t see all the programs that piqued your interest. The following are just a few of the interesting titles: Do Frugivorous Bats Use Shade Coffee Plantations for Roosts and Foraging Sites? The Cause for *Sturnira ludovici*; Ecological Correlates of Coronavirus Dynamics in West African Bats; Birdies, Eagles, and ... Bats? Bat Activity and Bat Conservation Efforts on Golf Courses in Delaware; and Hey Mom, What’s for Dinner? Post-weaning Maternal Food Provisioning in a Bat with a Complex Hunting Strategy.

If you are interested in reading the abstracts from the IBRC 2013, go to the following web site - [http://www.ibrc2013.com/pdf/ibrc\\_2013\\_abstracts.pdf](http://www.ibrc2013.com/pdf/ibrc_2013_abstracts.pdf)

The conference and the information you learn from each presentation and poster and speaker is very important but when in Costa Rica, you can’t miss a trip to the Bat Jungle in Monteverde. Dr. Richard LaVal started his Costa Rican bat career by accepting a job to study bats for a year and

Continued on page 7



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Events Page  
for news on  
upcoming  
presentations  
and field trips.



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## Fungus Dangerous to Bats Detected at 2 Minnesota State Parks

DNR NEWS – FOR IMMEDIATE  
RELEASE Aug. 9, 2013

Media contacts: Lori Naumann,  
information officer, Nongame Wildlife  
Division, 651-259-5148; Amy Barrett,  
information officer, Parks and Trails  
Division, 651-259-5627; Gerda Nordquist,  
Minnesota Biological Survey supervi-  
sor/mammalogist, Ecological and Water  
Resources Division, 651-259-5124.

A fungus dangerous to bats has been  
confirmed at Soudan Underground Mine  
State Park and Forestville/Mystery Cave  
State Park, according to the Minnesota  
Department of Natural Resources (DNR).

The fungus is known to cause white-  
nose syndrome (WNS), a disease that is  
harmful and mostly fatal to hibernating  
bats, and has decimated bat popula-  
tions in the eastern portions of the United  
States and Canada.

The DNR will step up its efforts to  
slow the spread of the fungus. While the  
disease is transmitted primarily from bat  
to bat, fungal spores may be inadvertently  
carried to caves by humans on clothing  
and caving gear. The syndrome is not  
known to pose a threat to humans, pets,  
livestock or other wildlife.

While only a few bats have tested  
positive for the fungus, the discovery has  
serious implications. If Minnesota follows  
trends of other states, the disease is likely  
to be present in Minnesota bats within two  
to three years.

“This is bad news for an important  
mammal in our ecosystem,” said Steve  
Hirsch, director of the DNR’s Ecological  
and Water Resources Division, which  
oversees the agency’s nongame wildlife  
program. “We’re prepared with special  
protocols to help keep the fungus from  
spreading.”

Public tours of Soudan Underground  
Mine and Mystery Cave will continue,  
but visitors will begin each tour with a  
brief lesson on how they can prevent the  
spread of the fungus.

After tours, visitors will be required  
to walk across special mats designed to  
remove spores from footwear. They will be  
advised not to visit other caves or mines  
with any clothing, footwear or gear they  
have used in areas where WNS or the as-  
sociated fungus is present because washing  
alone cannot sufficiently disinfect clothing.

Ed Quinn, natural resource coordina-  
tor for the DNR’s Parks and Trails Divi-  
sion, said, “Education is one of the most

effective tools we have to slow the spread  
of the disease.”

DNR nongame biologists and park  
managers have been working for several  
years with the U.S. Fish and Wildlife Ser-  
vice and leading bat researchers to learn  
more about and prepare for the disease.

The DNR’s actions are consistent  
with the National White-Nose Syndrome  
Decontamination Protocol, part of a na-  
tionwide effort to slow the spread of the  
disease. The DNR urge owners of private  
caves to learn about WNS and take simi-  
lar visitor precautions as outlined in the  
protocols.

Sampling for the fungus at the two  
parks occurred in 2012 and 2013. Recent  
testing to track the spread of the disease  
found that four bats of 47 sampled were  
positive for the fungus. Testing was part  
of a national study funded by the National  
Science Foundation and led by research-  
ers at University of California Santa Cruz  
and Northern Arizona University.

Minnesota has seven species of bats,  
four of which hibernate during the winter  
and are at greatest risk of contracting the  
disease. Mystery Cave, located in south-  
eastern Minnesota, has about 2,300 bats.  
Soudan Underground Mine, in the north-  
eastern part of the state, has 10,000 to  
15,000 bats.

Nordquist said the DNR will continue to  
monitor Minnesota’s bat populations closely,  
because healthy bat populations are impor-  
tant both ecologically and economically.

Many species of bats feed voraciously  
on insects, resulting in an estimated  
\$1.4 billion of savings to Minnesota farm-  
ers each year by providing pest control,  
according to a 2011 article in *Science*.

WNS is named for the fuzzy white  
growth of fungus observed on infected  
bats. In bats infected with the WNS  
fungus, unusual behavior often will be  
observed, such as flying during the day in  
the winter or roosting outside when tem-  
peratures are below freezing.

The DNR asks people to help moni-  
tor bats statewide. “If you see anything  
unusual — sick or dead bats or bats act-  
ing strangely — at Minnesota state parks  
or elsewhere, please report it as soon as  
possible,” Nordquist said.

Reports can be submitted online, us-  
ing the bat observation report on the DNR  
website, [www.mndnr.gov/wns](http://www.mndnr.gov/wns). These  
reports will be reviewed by DNR staff,  
and additional follow-up or testing will be  
conducted, as needed.

## WNS Causing Fungus Renamed

Scientists from the USDA Forest Service Center for Forest Mycology Research have performed DNA sequencing on the fungus formerly known as *Geomyces destructans*, and have taxonomically reclassified it as *Pseudogymnoascus destructans*. The paper they produced also discusses the taxonomic relationship with several other fungi found or discovered from bat hibernacula soil sampling.

The paper "Phylogenetic evaluation of *Geomyces* and allies reveals no close relatives of *Pseudogymnoascus destructans*, comb. nov., in bat hibernacula of eastern North America" is published in the journal *Fungal Biology* and you can read the abstract online at: <http://www.sciencedirect.com/science/article/pii/S1878614613001025>

### Highlights

- *Geomyces* and *Pseudogymnoascus* represent distinct genera in *Pseudeurotiaceae*.
- *Pseudogymnoascus destructans*, comb. nov., correct name for bat WNS fungus aka *Geomyces destructans*.
- No close relatives of *P. destructans* found in eastern North American bat hibernacula.
- *Pseudogymnoascus roseus* species complex includes closest known relatives of *P. destructans*.

White-nose syndrome (WNS) of bats, caused by the fungus previously known as *Geomyces destructans*, has decimated populations of insectivorous bats in eastern North America. Recent work on fungi associated with bat hibernacula uncovered a large number of species of *Geomyces* and allies, far exceeding the number of described species. Communication about these species has been hindered by the lack of a modern taxonomic evaluation, and a phylogenetic framework of the group is needed to

Continued from page 5

and decided to stay. A visit to the Bat Jungle includes a tour and a chance to view 90 live bats of eight species doing what bats do; eat, fly, squabble, etc.

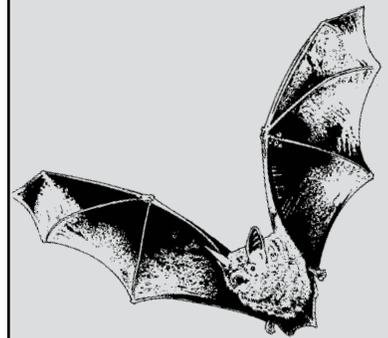
In fact, any one going to a bat conference should arrive a few days before the conference starts to learn more about the town, state, or country you are visiting; staying a few days after works as well. Barb and Meg visited both the Sarapiquí and Monteverde areas of Costa Rica. They saw the Poás Volcano, hiked at La Selva and the Tirimbina Biological Reserves, white water rafted on the Sarapiquí River, went

understand the origin of *G. destructans* and to target closely related species and their genomes for the purposes of understanding mechanisms of pathogenicity. We addressed these issues by generating DNA sequence data for the internal transcribed spacer (ITS) region, nuclear large subunit (LSU) rDNA, *MCM7*, *RPB2*, and *TEF1* from a diverse array of *Geomyces* and allies that included isolates recovered from bat hibernacula as well as those that represent important type species. Phylogenetic analyses indicate *Geomyces* and allies should be classified in the family *Pseudeurotiaceae*, and the genera *Geomyces*, *Gymnostellatospora*, and *Pseudogymnoascus* should be recognized as distinct. True *Geomyces* are restricted to a basal lineage based on phylogenetic placement of the type species, *Geomyces auratus*. Thus, *G. destructans* is placed in genus *Pseudogymnoascus*. The closest relatives of *Pseudogymnoascus destructans* are members of the *Pseudogymnoascus roseus* species complex, however, the isolated and long branch of *P. destructans* indicates that none of the species included in this study are closely related, thus providing further support to the hypothesis that this pathogen is non-native and invasive in eastern North America. Several conidia-producing isolates from bat hibernacula previously identified as members of *Pseudeurotium* are determined to belong to the genus *Leuconeurospora*, which is widespread, especially in colder regions. *Teberdinia hygrophila* is transferred to *Pseudeurotium* as *Pseudeurotium hygrophilum*, comb. nov., in accordance with the one name per fungus system of classification, and two additional combinations are made in *Pseudogymnoascus* including *Pseudogymnoascus camis* and *Pseudogymnoascus pannorum*. Additional sampling from other regions of the world is needed to better understand the evolution and biogeography of this important and diverse group of fungi.

for a very wet hike at the Children's Eternal Rainforest, hiked the Reserva Biológica Bosque Nuboso Monteverde, and visited an organic, 100% sustainable shade coffee plantation, Café San Luis.

In 2014, the North American Symposium on Bat Research will be held in Albany, New York and the meeting in 2015 is in Monterey, California. For further information on NASBR – [www.nasbr.org](http://www.nasbr.org)

There is no further immediate information about the 2016 International Bat Research Conference but it will be held in South Africa. The web site, <http://www.ibrc2013.com/index.php>, gives you details of the 2013 conference.



Bats Northwest

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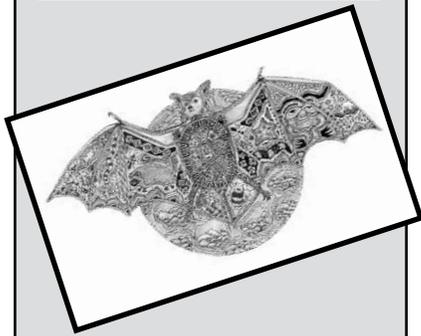
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