

Bats Northwest

News



BNW IS A NON-PROFIT, ALL VOLUNTEER CONSERVATION ORGANIZATION SUMMER/FALL 2011

Culprit Identified: Fungus Causes Deadly Bat Disease

News Release

October 26, 2011

Marisa Lubeck 303-202-4765 mlubeck@usgs.gov
Paul Slota 608-270-2420 pslota@usgs.gov
Catherine Puckett 352-377-2469 cpuckett@usgs.gov

The appropriately named fungus *Geomyces destructans* is the cause of deadly white-nose syndrome (WNS) in bats, according to research published today in the journal Nature.

The study by U.S. Geological Survey scientists and partners, conducted at the USGS National Wildlife Health Center in Madison, Wisc., provides the first direct evidence that the fungus *G. destructans* causes WNS, a rapidly spreading disease in North American bats.

"By identifying what causes WNS, this study will greatly enhance the ability of decision makers to develop management strategies to preserve vulnerable bat populations and the ecosystem services that they provide in the U.S. and Canada," said Anne Kinsinger, USGS Associate Director of Ecosystems.

During the study, 100 percent of healthy little brown bats exposed to *G. destructans* while hibernating in captivity developed WNS. Additionally, the study demonstrated that *G. destructans* can be spread through contact between individual bats.

"While our study confirmed that *G. destructans* is spread bat-to-bat, it is also important to note that virtually all pathogens, especially spore-producing fungi, are spread by multiple routes," said David Blehert, USGS microbiologist and an author of the study. "This is the reason that in an effort to further control the spread of WNS, resource management agencies have implemented universal precautions, including limiting human access to sensitive environments occupied by bats, decontaminating equipment and clothing moved between these environments, and restricting the movement of equipment between sites."

Insect-eating bats provide economically valuable ecological services that are estimated to

save the U.S. agricultural industry alone billions of dollars each year in insect pest-control expenses. However, U.S. bat populations have been declining at an alarming rate since 2006, when white-nose syndrome first appeared in New York State. Since then, the fungus *G. destructans* has spread southward and westward and has now been found in 16 states and 4 Canadian provinces. Bat declines in the Northeast, the most severely affected region in the U.S., thus far have exceeded 80 percent.

This study was conducted by scientists from the USGS, University of Wisconsin-Madison, Wisconsin Veterinary Diagnostic Laboratory, University of Tennessee-Knoxville, New York Department of Environmental Conservation, the U.S. Fish and Wildlife Service, Wisconsin Department of Natural Resources, and Bucknell University.

The article, "Experimental infection of bats with *Geomyces destructans* causes white-nose syndrome," can be accessed online. More information about WNS can be found on the USGS National Wildlife Health Center website and the U.S. Fish and Wildlife Service website.



Bats Northwest web
site is waiting for you
at:
www.batsnorthwest.org

Join our monthly
BNW Meetings!

Second Tuesday,
6:30-8:30

Sand Point-
Magnuson Park
Building 30
Conference Room



Bats Northwest
Envisions a Future

Where the Essential Role
of Bats is Understood

Where the Public Recognizes the
Vital Place of Bats In Our
Environment and Economy

Where All are Inspired by the
Remarkable Attributes and
Invaluable Contribution of Bats to
Our Natural Heritage

Board of Directors

Chris Anderson
John Bassett
Meg Lunnum
Michelle Noe
Barb Ogaard

technical Advisors

Curt Black
Sarah Schmidt

Newsletter Editor

Michelle Noe

Web Master

Michelle Noe

206.256.0406

www.batsnorthwest.org

Starbucks Anyone?

by Meg Lunnum

Bats Northwest receives some pretty interesting requests for presentations and opportunities to participate in various events. We were e-mailed an invitation to the Starbucks 5th Annual Petfair in September. Hope Lauterstein extended the invitation from a group of folks at Starbucks who donate their time to do what they can to help the lives of animals.

Of course, our initial reaction was: "Bats are not pets and they don't make good pets!!!" This venue did not seem to be the right audience for Bats Northwest. After a "No Thank You" to Hope, we were reassured that there would be more than pet information at the Petfair. Hope replied, "We

to educate the over 3,500 partners at Starbucks corporate. We said, "Yes."

Michelle Noe, President of Bats Northwest and editor of the newsletter and Meg Lunnum, Board Member, were on hand from 10:00am to 2:00pm out in



front of the Starbucks corporate headquarters. It was an interesting day and we did talk to lots of people.

are also hosting Wolf Haven, Seal Sitters, and the NW Chimpanzee Sanctuary, none of which I would ever encourage anyone to attempt to keep as a 'pet'."

As it turns out, Hope had been to Austin, Texas, met some people from Bat Conservation International and of course, saw the 1.5 million bats fly out from under the Congress Avenue Bridge. There was also the opportunity



Eagles Soar High to Help Bats



The Clarks and Boy Scout Troop #166 have been working hard to help the bats of Magnuson Park. Last year, Cole decided to help bats with his Eagle Scout culmination project. Rocket Box style bat houses were installed in the new wetlands to help the newly established habitat be more bat friendly. This year, Ceyel took the reigns and installed several more bat houses throughout the park. Signage is being developed to help park users understand the importance of bat habitat supplementation and why it is important to have healthy bat populations in the area.



Our Mission

*Bats Northwest
Envisions a Future*

. . .

*Where the
Essential Role
of Bats is
Understood
Where the Public
Recognizes the
Vital Place of
Bats*

*In Our Environment
and Economy*

*Where all are
Inspired by
the Remarkable
Attributes
and Invaluable
Contribution of
Bats to Our
Natural Heritage*

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](http://batsnorthwest.org/resources.html)



Update on the Status of the Western Red Bat in Washington State: Death of an Urban Legend?

John E. Bassett, Ph.D.

Bats Northwest

The following article was adapted from an article which first appeared in the Spring 2011 Newsletter of the Washington Bat Working Group.

The western red bat (*Lasiurus blossevilli*) is currently thought by many experts to occur within the borders of Washington State. The following web sites and publications list this species as a resident of the state: Western Bat Working Group, Bat Conservation International, University of Washington Burke Museum Division of Mammalogy, van Zyll de Jong (1985), and Harvey, Altenbach and Best (1999). The rationale for including this species in the bat fauna of Washington was presented by Nagorsen and Brigham (1993). They reasoned that since the species has been found in British Columbia, Canada, to the north and in the state of California, to the south, it must, therefore, occur at locations in between. They also present the meager evidence that the western red bat occurs in British Columbia.

Evidence for the presence of the western red bat in southern B.C. rests on a single specimen collected in 1905 by William Spreadborough in the Skagit River Valley approximately 23 km south of Hope, B.C. This site is located some 33 km north of the U.S. border and today is covered with mixed forest with little open water available. The bat, an adult female, was collected in July. In 1905 when this specimen was collected, all red bats found across North America were considered to be of a single species, *Lasiurus borealis*, with those found on the west coast to be of the subspecies *L. b. teleotis*. This specimen still exists today in the mammalogy collections of the National Museum of Canada in Ottawa.

As mentioned above, before 1988 all red bats in North America were considered to constitute a single species, *Lasiurus borealis*, with 2 recognized sub-species. The eastern sub-species, *L. b. borealis*, was found in the eastern and middle parts of the continent up to the Rocky Mountains, while the western sub-species,



Eastern Red Bat.
Harvey, M.J., J.S. Altenbach, and T.L. Best

L. b. teleotis, was found on the west coast from California southward into the intermountain west in Utah and Arizona. Baker and co-workers (1988) in a revision of the genus *Lasiurus* presented genetic evidence for species level differences between these Ingles, L. G. 1965. Mammals of the Pacific presented genetic evidence for species level differences between these sub-species. Red bats of the



Western Red Bat.
Harvey, M.J., J.S. Altenbach, and T.L. Best

eastern and middle part of the continent remained *L. borealis*, while those on the west coast (*L. b. teleotis*) became members of the tropical and subtropical species, *Lasiurus blossevilli*. The common name for this species became the Western Red Bat. Thus, animals in systematic collections that had been classified as *L. b. teleotis* became instant members of another species, *L. blossevilli*, with the publication of this well-done study. The single female red bat from the upper Skagit river drainage in B.C. became a western red bat at that point in time.

Other evidence for the occurrence of red bats in the western provinces of Canada also exists. Fenton and co-workers (1983) reported acoustic records for the red bat (*Lasiurus borealis*) from the Okanogan River Valley between Okanogan Falls and Oliver, B.C. Acoustic surveys were conducted in July and August, 1982, using QMC mini-bat detectors equipped with broadband microphones and analyzed with zero-crossing period meter technology. Since this study was conducted before the taxonomic revision of the genus *Lasiurus* by Baker et al. (1988), the bats detected were assigned to the species *Lasiurus borealis*, the red bat. Patriquin (2004) captured an adult female eastern red bat (*Lasiurus borealis*) in mist nets along the Athabasca River approximately 60 km north of Fort McMurray, Alberta, Canada. The author also discussed captures of 4 other eastern red bats in southeastern Alberta at locations that are greater than 600 km south of the Fort McMurray capture site. The Western Canadian Bat Network Newsletter (Volume 17, 2010) (srd.alberta.ca/BiodiversityStewardship/AlbertaBatActionTeam/documents/WesternCanadaBatNetwork-Newsletter017-Fall2010.pdf) also documented the presence of the eastern red bat (*Lasiurus borealis*) in northeast British Columbia within 20 km of the Alberta border. All of these records are considered to be on the western edge of the current distribution of the eastern red bat.

New information regarding the presence of the western red bat in southern British Columbia was presented recently in the Western Canadian Bat Network Newsletter (Volume 18, 2011) by Nagorsen

Keep up to date!
Check out
Bats Northwest's
Website.

Watch our
Events Page
for news on
upcoming
presentations and
field trips.

He described the results of DNA testing on a wing punch from the original 1905 red bat captured in the upper Skagit River valley. Sufficient DNA was recovered from the museum specimen to sequence, and the results showed the animal to be an eastern red bat, *Lasiurus borealis*, as defined by Baker and co-workers (1988). Based on these results, there now exists no evidence for the occurrence of the western red bat, *Lasiurus blossevilli*, in southern British Columbia, Canada. These results also support the original interpretation of the 1905 specimen by Cowan and Guiguet (1956) that it was an accidental occurrence and therefore not a resident of the area. These authors also point out that no red bats of either species have been found in the U.S. states immediately south of British Columbia.

Historical and current literature on the bat fauna of the northwestern United States makes no mention of red bats of either species. Dalquest (1938, 1948) makes no mention of, much less provides evidence for, the occurrence of red bats in his description of the fauna of Washington. The same applies to the bat fauna currently recognized by the State Departments of Game in Idaho and Oregon. Also, red bats have not historically been found north of the northern end of the Central Valley in California (Ingles, 1965). Finally, eastern red bats have been reported only in the central and eastern portions of Montana (Foresman, 2001). These records are also located on the western edge of the current distribution of the eastern red bat.

In conclusion, new evidence for the presence of the western red bat (*L. blossevilli*) in Washington is required to continue to include the species in the fauna of the state. The data used previously to justify the occurrence of this species has changed and no longer supports the presence of western red bats. To resurrect and support the urban legend that the western red bat is found in Washington, new data is required.

References

- Baker, R. J., J. C. Patton, H. H. Genoways, and J. W. Bickham. 1988. Genic studies of *Lasiurus* (Chiroptera: Vespertilionidae). Occas. Papers Mus., Texas Tech Univ., 117:1-15.
- Cowan, I. M., and C. J. Guiguet. 1956. The Mammals of British Columbia, Handbook #11. British Columbia Provincial Museum, Victoria, 413 pp.
- Dalquest, W. W. 1938. Bats in the state of Washington. J. Mamm., 19:211-213.
- Dalquest, W. 1948. The mammals of Washington. Univ. Kansas Publ., Mus. Nat. Hist., 2:1-144.



Fenton, M. B., H. G. Merriam, and G. L. Holroyd. 1983. Bats of Kootenay, Glacier, and Mount Revelstoke national parks in Canada: identification by echolocation calls, distribution, and biology. *Can. J. Zool.*, 61:2503-2508.

Foresman, K. R. 2001. *The Wild Mammals of Montana*. Amer. Soc. Mammal., Lawrence, vii+278 pp.

Harvey, M. J., J. S. Altenbach, and T. L. Best. 1999. *Bats of the United States*. Arkansas Game and Fish Commission and U.S. Fish and Wildlife Service, 64 pp.

Ingles, L. G. 1965. *Mammals of the Pacific States: California, Oregon, and Washington*. Stanford Univ. Press, Stanford, xii+506 pp.

Nagorsen, D. W., and R. M. Brigham. 1993. *Bats of British Columbia*. UBC Press, Vancouver, 164 pp.

Patriquin, K. J. 2004. Red bat (*Lasiurus borealis*) captured in northeastern Alberta. *Northwest. Nat.*, 85:28-30.

van Zyll de Jong, C. G. 1985. *Handbook of Canadian Mammals: Vol. 2, Bats*. National Museums of Canada, Ottawa, 212 pp.



Bats Northwest

206.256.0406

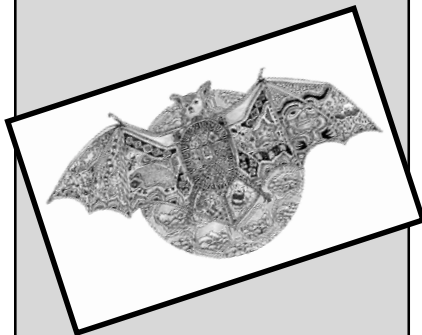
www.batsnorthwest.org



Bats Northwest Mailing Address:

P.O. Box 3026
Lynnwood, WA 98046
206.256.0406

Bats Northwest web site:
www.batsnorthwest.org



Become a Bats Northwest Member

Join us in the adventure to learn more about our bat neighbors!

Membership Options: _\$35 _\$50 _\$75 _\$100 _Other

Name: _____

Address: _____

Phone: _____

Email: _____

BATS NW T-SHIRTS

*You'll look great in our Bats Northwest short sleeve T-Shirt!
It also makes a wonderful gift.*

Heavyweight cotton, natural off-white, with a brightly colored bat graphic.

I WOULD LIKE TO ORDER _____ (QUANTITY) BATS NORTHWEST T-SHIRT(S)
AT \$22.00 EACH FOR A TOTAL OF \$ _____ (AMOUNT).

SMALL___ MEDIUM___ LARGE___ X-LARGE___ 2X___



206.256.0406

Lynnwood, WA 98046

P.O. Box 3026
Bats Northwest

