Vertebrate Zoology Hot Topics

Ian M. Abernethy

Zach P. Wallace

Lead Vertebrate Zoologist

Assistant Vertebrate Zoologist



Vertebrate Zoology Hot Topics

- White-Nose Syndrome
- What are the hot topics from your perspective?



White-Nose Syndrome



• The predominant threat to bats in North America





• Caused by the fungal pathogen *Pseudogymnoacus destructions* (Pd)



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- Mortality occurs from increased arousals during winter

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- Local extirpations
- Endangered Species Act listings and petitions

• First documented in New York in the winter of 2006 / 2007



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- Likely introduced from Europe by humans



- First documented in New York in the winter of 2006 / 2007
- Likely introduced from Europe by humans
- Continued to spread across North America

• 2010



Map by: Cal Butchkoski, PA Game Commission

• 2015



• 2018



Citation: White-nose syndrome occurrence map - by year (2018). Data Last Updated: 10/1/2018. Available at: https://www.whitenosesyndrome.org/resources/map.

- WNS confirmed in 33 states and 7 provinces
- Pd confirmed in 3 additional states



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2018 WNS Surveillance Results

- Pd was detected in 10 individual bats
- WNS was confirmed in 1 bat

2018 WNS Surveillance Results

• These individuals were from 4 NPS units



Results – Missouri National Recreation River

- Pd was detected in 3 bats
- 2 Northern long-eared bats
- 1 Silver-haired bat



Results – Missouri National Recreation River

- Pd / WNS known to occur
- Other evidence suggests large population declines



Results – Badlands National Park

- Pd was detected in 5 bats
- 4 big brown bats
- 1 western small-footed myotis



Results – Badlands National Park

- First case of Pd in South Dakota
- First case of Pd in a western small-footed myotis



Results – Fort Laramie National Historic Site

• Pd was detected in 1 little brown bat



Results – Fort Laramie National Historic Site

• First detection of Pd in Wyoming



Results – Jewel Cave National Monument

• Pd and WNS were detected and confirmed in 1 long-legged myotis



Results – Jewel Cave National Monument

- First confirmed case of WNS in South Dakota
- First confirmed case of WNS in a long-legged myotis



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 - 2 western bat species are affected

What can you do?

- Don't disturb hibernating bats
- Don't enter closed or gated caves or mines
- Don't use gear that has been used in areas with Pd / WNS
- If you see bat activity in winter or dead bats report it!

• Questions?

• What are the implications of WNS for your entity?

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 - Management plans?
 - Changes in operations?

• Are there data gaps that make management or response difficult? - what are they?

• Does your agency have any ongoing research to address WNS?

• Does your agency have a WNS communication plan?

• What are other wildlife hot topics?

Methods – Pd / WNS Surveillance

• Hibernacula Surveys VS. Landscape Surveys

• Objective:

Initiate WNS / Pd surveillance on the leading edge of the disease and unaffected areas

Methods – Survey Timing

• Requires that Pd or WNS is detectable

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• Detectable levels of Pd remain for ~4 weeks

Methods – Survey Timing

• Signs of WNS remain for ~ 4 weeks

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- Especially on the leading edge of the disease
 - Novel habitat types
 - Novel bat species

